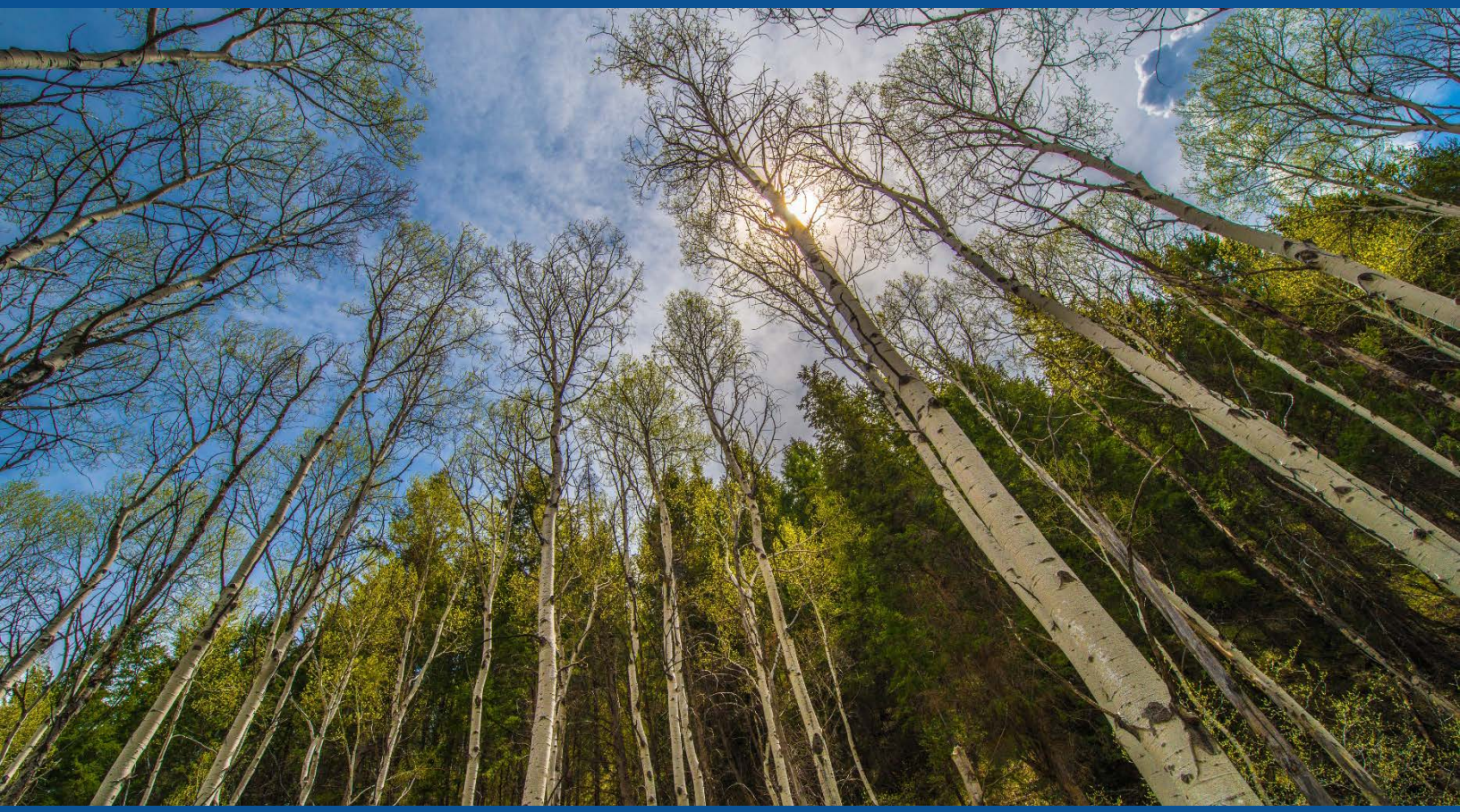
WESTERN LANDOWNERS ALLIANCE

STEWARDSHIP WITH VISION



Frontline Perspectives

Landowners speak from experience on forestry

Western Landowners Alliance
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FRONTLINE PERSPECTIVES:
Landowners speak from experience on forestry

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Carrizo Valley Ranch, New Mexico

The American West is home to some of our nation's most iconic forests. These lands comprise an incredibly diverse ecosystem, support local economies and provide critical water supplies, recreational opportunities and sanctuary for wildlife populations. Forests also help provide clean air and healthy soils by filtering out pollutants and sequestering carbon dioxide.[1] However, both publicly and privately owned forests face increasing threats that range from insect infestation and development pressure to extreme forest fires, unstable timber markets and, perhaps most threatening, an ever-dwindling U.S. Forest Service budget and diminishing financial assistance for private land management.

A national policy of fire suppression over the last century has almost entirely extinguished the natural forest-fire rhythm that has maintained healthy forests over millennia, resulting in overly dense forests with thicker undergrowth that in turn increase the risk for high-intensity, destructive wildfires.[2] This is particularly true for lower elevation forests, where in the past fire cycles had been frequent and where growing human settlement now requires ongoing fire suppression. In 2017, hundreds of wildfires burned communities across the West in yet another devastating fire season.

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[1] Oswalt, S. N. and Smith, W. B., eds. 2014, U.S. Forest Resource Facts and Historical Trends, Forest Service FS-1035, U.S. Department of Agriculture, https://www.srs.fs.usda.gov/products/marketing/ cards/fs-1035.pdf (accessed January 3, 2018).
[2] Oswalt and Smith.

According to the American Forest Foundation, nationwide one in four rural Americans is a family forest owner.[3] In the West, more than 30 percent of forested areas posing a high risk of wildfire are privately owned, mostly due to insufficient management resources and shrinking markets for forest products.[4] Private landowners play a crucial role in ensuring the restoration and maintenance of healthy and resilient forests, but they face many barriers to the successful implementation of good, common-sense management on the ground.

Thinning and Prescribed Fire

Jim Johnson, owner of Elk Glade Outfitters in southern Colorado, points to the absence of natural fire—together with repeated fire suppression—as the cause of many of the land-health issues on his property. Historically, regular forest and grassland fires kept trees from encroaching into the open prairie. Without those fires, Johnson is quickly losing his valleys and productive grasslands to forest.

Bill McDonald, an Arizona rancher and prominent member of the Malpai Borderlands Group (MBG), has faced the same problem. He explained, "We watched brush encroachment take over at the expense of grasses. We needed to get fire back in this landscape." New Mexico rancher Sid Goodloe, owner of Carrizo Valley Ranch, concurred, "Fire is friendly to grass and an enemy to brush" because brush grows from the end of limbs, and fire kills the limbs. Grass, on the other hand, regenerates from underground, from the root base. "That's how fire maintained this country."

State and federal agencies now recognize the urgent need for the use of prescribed fire to reduce stand densities, lower wildfire intensity back to a sustainable and productive level, and restore the ecological benefits of fire in fire-adapted forests. But complex policies around permitting, liability, regulations, ownership boundaries, implementation and other issues related to prescribed fire have rendered this management tool almost inaccessible to private landowners.

Private landowners across the West understand the important role of fire in fire-adapted ecosystems. The MBG, which is made up of about 1 million acres of deeded and leased land, has had success in bringing fire back onto the landscape. As Don Decker from the Natural Resources Conservation Service (NRCS) explained, "Fire out here isn't a bad word. It's generally very beneficial. There's just a limited amount of moisture here and precipitation, and in the end the shrubs can outcompete the grass if given a chance, so fire is one way to hold back that brush and keep the grass vibrant and healthy."

Those who have had the opportunity to use prescribed burning on their lands know that careful management that includes planned burns can prevent inevitable wildfires from becoming catastrophic and gradually reintroduce fire and its many benefits into the ecosystem. This makes a lot of sense to Aaron Jones, who has succeeded in using prescribed burning to reduce stand density on a ranch in northern New

[3] American Forest Foundation 2017, "Root for Rural Family Forest Owners in the Tax Code" (blog post). https://www.forestfoundation.org/contentmgr/showdetails.php/id/3/view_type/950040 (accessed January 3, 2018).
[4] American Forest Foundation 2015, "Western Water Threatened by Wildfire: It's Not Just a Public Lands Issue." https://www.forestfoundation.org/stuff/contentmgr/files/1/3d98bbe1b03a0bdf4c726534d438b0ab/misc/final_fire_report.pdf (accessed January 3, 2018).

Mexico and southern Colorado. "It's not *if* we get a fire, it's *when* we get a fire," he said. "We know it's coming but when it burns through it's not going to take every tree; it's going to mimic fire in a landscape that burned in the last 50 years rather than 200 years."

Rancho del Oso Pardo, New Mexico

Jones, who manages Rancho del Oso Pardo outside Chama, New Mexico, has worked on and off the ranch for the last 27 years. As part of their management plan, the ranch developed a detailed map of the property with layers identifying forest and habitat types, ecosystem types, steepness of terrain, stand age categories, watershed and water resources, etc. They looked at how fire would respond to the different habitat types and how it would be likely to behave throughout the property. They identified the most critical fire zones and prioritized direct thinning and other forest health projects in these areas. While they've made good progress toward improving forest health on the ranch, Jones pointed out that past New Mexico policies made it easier to use prescribed fire as a management tool. "We used to be able to burn a lot of acres without too many people and at low cost," he said. "Now liability, permitting, etcetera, has really changed that." Gary Harris, a private forestry consultant in New Mexico and Colorado, who works closely with landowners in the Chama Peak Land Alliance, has seen similar changes. "We have burned hundreds of acres here with the cowboy burning mentality—i.e., using local resources and without expensive burn plans and burn crews."

Policies and Regulations

Some landowners and managers work in regions with strict air quality regulations that make it much harder to use controlled burning on private property. For Phil Ramsey and Beau Larkin at the MPG Ranch in Montana, planning for fire can be difficult. "We need some flexibility," Larkin said, referring to federal air quality regulations. "The forest is going to light someday and it's going to be a big deal. We could do smaller burns between now and then and probably head that off."

Missoula County, Montana, where the MPG Ranch is located, is a designated federal airshed, which brings additional air quality regulations that don't apply in most other places. Larkin, the forest ecologist at the MPG, explained it this way: "It's basically impossible for us to burn. We might do a 20-acre rangeland burn every few years. It's so rare that the stars line up. It's a short window when you're allowed to burn, and then it can't be too hot or too wet. It's damn difficult to burn just 20 acres. Maybe one in five years when you can do it. You get all the expensive personnel, and then they sit around because conditions are wrong."

Add to the strict burn regulations the need for very specific wind, temperature and relative humidity conditions, and fire becomes that much more difficult to implement. For Harris, the solution is to try to burn piles in the late fall or winter, when a layer of snow on the ground minimizes the risk, but this approach isn't always feasible. "For some fuel types you can do lower temperatures and higher humidity, but others don't work that way."

For Larkin and Ramsey, this leaves thinning as the best and only management tool to maintain the forest and lessen the risk of catastrophic wildfire. According to Larkin, their only option is to "thin like crazy" in an effort to minimize the risk of catastrophic wildfire. But thinning by itself, without fire, has its limitations. "The problem with thinning is you don't get nutrient cycling," said Larkin. "Everything is just going to sit there. We need to cut, and we need to burn." Thinning does not reduce the undergrowth that creates high fuel levels and contributes to high-intensity wildfire, and as Larkin pointed out, "Eventually you're going to get a fire you can't put out."

Sid Goodloe, Carrizo Valley Ranch, New Mexico

Liability

In regions where landowners can more easily implement fire, the concern with liability becomes an issue of great concern, as Jones implied above. In some states, a landowner can be criminally or civilly liable for damages that result from a prescribed fire. In addition, if a prescribed fire escapes and damages federal lands or property, federal criminal statutes may apply.[5] More often, state statutes are simply unclear as to landowner liabilities.

Gus Holm, manager of the Vermejo Park Ranch near Raton, New Mexico, concurred with Jones. "Liability is one of the hardest barriers to overcome, but it is important to do so because prescribed fire is critical in forest management and restoration," he said. For New Mexico ranchers Nelson Shirley (Spur Lake Ranch), Nancy Ranney (Ranney Ranch) and Sid Goodloe, liability weighs heavily when it comes to fire. "If you have a fire that burns across federal or state land, get ready for the lawyers," Shirley said. "You have liability down to your shoelaces."

[5] Gass, Tobah M. 2009. *Reducing Barriers to Use of Prescribed Fire in Privately Owned Forests*. Colorado Forest Restoration Institute and Department of Forest, Range and Watershed Stewardship, Colorado State University. https://fri.colostate.edu /wp-content/uploads/sites/22/2018/03/Gass_BarriersPrescribedFirePrivateLand2.pdf (accessed June 6, 2018).

Goodloe agreed. Risk has increased "because people build homes in fire prone areas. The Forest Service has to worry about protecting these homes to do a controlled burn." Goodloe now must worry about neighbors when he burns. "I am in for a lawsuit and may lose my ranch if a fire escapes."

Ranney has discussed prescribed fire as a potential management tool for juniper regrowth and encroachment for more than 10 years, but "it's very scary." Like Goodloe, she worries about the neighbors. And given the consistent wind patterns in her area, there are very few good burn days. Right now, the only tools they have to remove juniper are selective "plucking" of the entire tree—including roots—by an excavator with a hydraulic thumb, which, although very effective, is expensive and only partially funded by the NRCS EQIP program; and the use of a directed herbicide applied to the base of the plant, which is labor and time intensive. "Fire would be much more healthy and natural." Although the ranch has not been able to implement prescribed fire in the past, Ranney is "hoping to give burning a try in 2018."

Permitting

Permit requirements vary by state. In Colorado, landowners are required to apply for both state-level smoke permits and county-level burn permits. Depending on the extent of the burn they are planning, or the number and size of piles, they must acquire either a general, open-burn permit or a "significant user" permit.[6]

For some Colorado landowners, acquiring smoke permits from the state can prove challenging and doesn't always make a lot of sense. As a ranch manager in rural Colorado expressed, "Smoke permits are a joke. We have to have significant user classification, which is really made for the Front Range in Colorado. So they are thinking about public health in much more dense areas."

For Craig Taggart, the environmental manager on the Trinchera Blanca Ranch, located in southern Colorado, this creates a substantial hurdle. "The state has taken the policy of applying guidelines statewide, which means that the standards for areas in the Front Range are the same for wide open country where there are no people to impact," he explained. "You can only burn on 'excellent,' 'good' and 'very good' days; not on 'poor' or 'very poor' days, even though there are no people that would be affected." This often leads to "lots of back and forth and checking and rechecking if the burn windows are good [and] lots of sitting around and not burning on days when it would be great as far as escape risk, but not great in terms of smoke dispersion conditions." A solution would require the state to change the regulations to "consider the actual locations rather than being a blanket regulation for the whole state. Make the regulations appropriate to the location and to the people."

Gary Harris concurred: "You get a nice burn day, but you can't meet the ventilation category, so you can't burn." Ideal burning conditions, in this case, are in direct contradiction with air quality regulations, putting landowners squarely between a rock and a hard place.

[6] Gass, Tobah M..

Les Dhaseleer, the natural resources manager for Vermejo Park Ranch, said that the smoke permitting process in New Mexico is "complex, but if you have done it before then it's pretty easy." He permits the whole ranch and it only "takes seven or eight days out of the year." However, he admitted, "it's very burdensome for smaller ranches" that don't have the same personnel and resources and are not familiar with the process.

And even with ideal burning conditions and permits in place, landowners are still faced with restrictions designed mainly for "yard burners," explained a private forester from Colorado. In Colorado, burn piles are usually limited in size to 4 ft. by 4 ft. by 4 ft. and must be extinguished by sunset. "Four by four by four is ludicrous," he added. "I burned piles yesterday that were 100 ft. by 100 ft. by 15 ft."

Public Perception

In addition to liability and permitting issues, public perception also poses a challenge to how landowners manage their lands. When Sid Goodloe purchased his Carrizo Valley Ranch more than sixty years ago, the land had been left in poor condition from consistent overgrazing compounded by persistent drought. The two issues together had led to shrub encroachment onto the ranch's grasslands. "When I got here I didn't know anything about land health," he admitted. "I had to learn it by trial and error. It was just me and a chainsaw." Over time, Goodloe began to recognize the importance of fire in restoring and managing healthy lands. "The problem with this whole deal is lack of fire," he said.

Early on in his ranch ownership, Goodloe found that even talking about fire was a "no-no." Policies around fire suppression, together with lack of acceptance among the public, made the option of fire as a management tool out of the question. "You didn't talk about fire except to put it out." Public perception has significant influence on policymakers, and only recently has perception of prescribed fire—together with the associated smoke and air quality concerns—become more positive, as public understanding of the role of fire in forest management has increased.

Access to Skilled Labor and Equipment

Even as public perception becomes more favorable toward prescribed fire in certain areas, economic and resource barriers keep this management tool largely out of reach for many landowners. "We don't have the personnel, we don't have the equipment, and we don't have what it takes to put in the blacklines to do the burn," Goodloe said. He is not alone in struggling to find people who can plan, supervise and perform fieldwork on managed fires, including qualified equipment operators. Lack of access to skilled labor, specialized equipment and necessary financial resources are all common barriers to the use of prescribed fire for landowners.

In the West, due to the extent of federal land, most wildland firefighters and prescribed fire crews are certified under the federal fire training standards established by the National Wildfire Coordinating Group (NWCG). These credentials are considered the gold standard in the industry. However, they are specifically tailored to federal and professional firefighters and require ongoing training, evaluation and certification,

which are generally only possible for those who work with federal fire crews. This means that landowners and their employees and contractors not affiliated with federal agencies can have a difficult time achieving and maintaining NWCG fire credentials beyond the basic red card—and even NWCG certification doesn't fully alleviate the liability risk to landowners.

In other parts of the country, particularly in the Southeast, many states have passed legislation to create certified burner training programs and accompanying liability relief for private landowners. Landowners who are certified or who contract with certified individuals to conduct prescribed fires and implement them in accordance with proper procedures receive a measure of liability relief from the state. However, most Western states lack such programs.

One exception is Colorado, which created the Colorado Certified Burner program in 2013, providing limited liability protection to individuals who were either certified through this program or qualified by NWCG standards as a Prescribed Burn Boss. According to the 2013 Colorado Prescribed Burning Act, such an individual "is not liable for civil damages for acts or omissions made in good faith resulting in damage or injury caused by fire or smoke resulting from prescribed burns they conduct on the landowner's property and in compliance with applicable state laws and local ordinances, unless such private landowner's or designee's acts or omissions are grossly negligent or willful and wanton."[7] Other states—including New Mexico, Arizona and Montana—still do not have this kind of prescribed fire legislation. And not only are certified burner programs rare in the West, but the time and travel required to attend classes and become certified makes it tough for landowners who live in remote areas to participate when they do exist.

Finally, most prescribed fire professionals are affiliated with fire departments and public agencies. Sometimes it is possible for a landowner to contract volunteer firefighters or even federal contract crews. However, the availability of these resources can be very limited, particularly when federal agencies are busy implementing prescribed fire or responding to wildfires. State forestry departments can be precluded by law or directive from assisting landowners with prescribed fire. The Nature Conservancy, Forest Stewards Guild and several private companies have been able to train and organize prescribed fire crews through collaborative burning models and Prescribed Fire Training Exchanges (TREX). These alternate approaches provide hands-on training opportunities for wildland fire professionals and accomplish treatment objectives by making highly trained professionals and resources such as water tanks, UTVs or wildland engines available. Organized events last from one to two weeks and include planned burns on selected properties. For willing landowners, hosting a TREX or collaborative burn event is a rare opportunity to conduct a burn that could otherwise be financially and logistically prohibitive. However, resources and programs like these are few and far between, relative to the scale of need in the Western landscape.

Landowners can face a similar shortage of resources when it comes to mechanical thinning. Randy Mannix, a fourth-generation rancher on the Mannix Brothers Ranch in west-central Montana, has found it especially challenging to find quality loggers to do thinning and restoration work. Mannix explained, "The equipment that is out there today allows for loggers to do an exceptional job of forest management, and it can be done

[7] Colorado Prescribed Burning Act, Colorado Senate Bill 13-083, 2013. Accessible at http://www.leg.state.co.us/CLICS/CLICS2013A/csl.nsf/fsbillcont3/5F5B370100DCF8DC87257A8C00507309?Open&file=083_enr.pdf.

safer and more comfortably. However, I don't know of a profession that has more challenges." The huge capital outlay loggers need to get started, uncertain markets, difficult weather conditions—ranging from wet and muddy to cold and frozen—the challenging nature of the physical work and the long distances they need to travel are just a few of the reasons for the continued lack of quality personnel to do the forestry work needed on the Mannix Brothers Ranch and similar properties.

The same holds true in Colorado and New Mexico. Jim Johnson and others in this area struggle to find enough people to do the work at the scale that is needed. Not only are there very few good logging companies to do the thinning, they pointed out, there is also very little choice in contractors or labor to do the physical work. On finding good local labor, "It's almost impossible," said Gary Harris. "They last a day or two and then they are gone. Bigger outfits have a visa deal, so they can bring up folks from Mexico." Moreover, there are limited markets or mills left for the timber coming off the ranch.

Expense and Access to Mills and Markets

In much of the West, local mills for processing lumber and local markets for that lumber have all but disappeared, especially in smaller rural communities. For landowners in northern New Mexico and southern Colorado who work with Gary Harris, the best available mill that is interested in their timber is over two hundred miles away, in Montrose, Colorado, which means a lot of fuel for transporting logs, resulting in low stumpage values.

Restrictions on logging trucks add another level of difficulty. Harris explained, "The highway weight limit is 80,000 pounds on the New Mexico side, but in Colorado it's 85,000 pounds. This is a 2.5-ton difference. Most loggers and truck drivers are paid on a weight basis; they lose money by crossing the border into New Mexico. In Colorado, you can get an exemption to go above the 85,000 pounds, but New Mexico doesn't have that." Colorado law also requires truck drivers to install electronic logbooks and limit their time on the road to 11 hours per day, further limiting their working area. Harris believes a solution could involve creating an enterprise zone that "gives us some allowances to help promote the logging industry"—for example, setting the same weight limit in New Mexico that exists in Colorado.

Back to skilled labor: where landowners are fortunate enough to find people to do the work on the ground, most simply cannot afford the expense. Mechanical thinning costs an average of $300 to $1,000 an acre. Even when the timber is merchantable and a market exists within reasonable distance to offset some of the costs, forest treatments are often at best only a break-even proposition for the landowner. And without the ability to allow natural fires to burn or to implement prescribed fire, landowners frequently struggle not only with the high initial cost of thinning and clearing, but also with the expense of repeated treatment in areas where regrowth happens. "We spend millions of taxpayer dollars fighting wildfires," Gus Holm explained, "but there is no money for prescribed fire. Prevention money is much cheaper, everyone knows that. But human nature is to wait and be reactionary."

Mannix Ranch, MT

For Randy Mannix, selling timber has saved the Mannix Brothers Ranch a time or two. While he feels strongly that maximizing timber productivity together with wildlife values and grazing potential must be the ranch's priorities, the main barrier to effectively managing its forested acres is the loss of mills and lack of markets for forest products. His area of Montana has already lost many mills and a paper plant, and this has been a huge economic hit for the local rural communities. Mannix said he feels fortunate that a few mills still do exist in his area. However, he explained, "as for the mills that are still here, if it weren't for local guys taking heroic steps and losing a lot of money, we wouldn't even have those." "Each year we lose some," added Gary Harris. "It's a slim margin on anything they do. Any little disruption really puts a crimp in their operations." Nelson Shirley agreed. "No one's going to build a mill without some sort of guarantee of how much they can get year to year."

Nancy Ranney faces similar challenges down in central New Mexico, where she sees the complete lack of local market options as the number one barrier to good forest management. There is huge potential for positive economic impact on the local community using cleared wood as a resource. Pellet stoves are popular, and a wood pellet plant could be set up locally to use cleared juniper from the surrounding area, including Ranney Ranch, and provide pellets for sale and local use. "There is a way to connect the needs on the ranch with community development. This could be pretty convincing." Ranney has so far been unable to find grants to get this idea off the ground.

Another reason that local mills have failed is the lack of a consistent supply of wood. In the West, especially, a predominately checkerboard land-ownership pattern means that private lands are largely inter-mixed with and surrounded by public lands. The wood coming off private lands alone is not sufficient to incentivize new mill development and drive a wood products market. Unfortunately, consistent federal supply off public lands cannot be guaranteed due to a variety of administrative challenges ranging from U.S. Forest Service budget constraints and limited personnel to limitations caused by regulatory processes and associated litigation. For example, federal agencies are usually limited to budgeting three to four years at a time, while investors often need much longer commitments of 10 to 20 years in order to ensure a return on their investment.

In terms of regulatory constraint, the National Environmental Policy Act (NEPA), for example, requires federal agencies to assess the potential environmental impacts of proposed actions. This regulation helps avoid developments that can harm wildlife habitats and natural resources, but it can also slow or prevent other activities, such as forest thinning. As Harris explained, "The Forest Service has always been tough on

guaranteed supply. They have the NEPA process and they can lose it right there when they get to the public input stage." The NEPA process doesn't only affect markets and guaranteed supply, it also adds expense. Private landowners interested in forest treatments on leased public land can face increased costs and time delays associated with NEPA. "A big barrier is trying to get NEPA done," explained Shirley.

Federal Funding

The only way that some private landowners have been able to afford forest treatment and restoration work is through federal funding programs primarily housed under the USDA Natural Resources Conservation Service (NRCS). "The only thing that made it doable was money from federal programs," stated Shirley. Sid Goodloe concurred. Without federal funding programs, "I couldn't have done the things I've done here. They have great programs."

Nancy Ranney started her forest management activities with money from the NRCS Great Plains program and then later received funding from the NRCS Environmental Quality Incentives Program (EQIP). This worked well for a while. However, as she explained, "EQIP is now financially strapped. It has gone from $400,000 to $100,000 for the district." Mannix also expressed feeling "fortunate to have been awarded EQIP grants to help with pre-commercial thinning practices…and make it possible to perform the management tasks that don't generate any cashflow." He added, "It's critical for these funds to continue to be available."

In addition to NRCS EQIP, Ranney has also done work under the Conservation Stewardship Program (CSP), a USDA Farm Service Agency program, which she has drawn on for eight years (each award is for a five-year period) and used to implement a variety of conservation practices on the ranch. While many landowners agree that funding for conservation title programs through the Farm Bill is critical for private land management, Mannix also reflected on a desire for the market to be "strong enough that [we] don't have to go to the government for management alternatives."

Models and Successes

Amid a myriad of barriers and challenges, private landowners throughout the West have taken initiative to restore and maintain forest health.

In addition to some of the landowners discussed above, Greg Moore, owner and operator of Moore Land and Cattle Company in northern New Mexico, has successfully used prescribed fire to reduce shrub encroachment into his grasslands, which has saved water for the benefit of healthier grasses. After years of trying to push back encroachment with front-end loaders and chemicals, to no avail, Greg decided to try fire. When asked about his management, he replied, "I don't manage anything. I just light the fire and let the fire do the managing. It's that simple."

In spring 2017, Moore was able to burn approximately 6,000 acres. The burn was over in a matter of days, but the prep leading up to it was years in the making. Greg started preparing the land in 2006, by spraying

herbicides to kill piñon and juniper, which in turn led to what he described as an "explosion" of grass growth. The increased grass growth built up the needed fuel load to carry fire across the landscape and ensure a successful burn. Greg described his situation as, "We're either coming out of a drought or going into the next one. Every morning I wake up thinking about how I'm going to beat the next drought." And for several decades now, he's done just that, through careful management that includes planned rotational grazing and prescribed fire.

Emily Hohman, Executive Director of the Chama Peak Land Alliance, has seen another effective model of prescribed burning that "has great potential in the West." Prescribed Burn Associations or Landowner Burn Associations are collaborative groups common mostly in the Great Plains but also starting to pop up in the Southeastern U.S. Hohman plans to explore this model with Chama Peak Land Alliance.

The Malpai Borderlands Group has also had success in implementing prescribed fire and studying "the effect of fire on a landscape scale being applied as a management tool," explained Ben Brown, MBG's science coordinator. According to Peter Warren from The Nature Conservancy, "The Malpai Group is really focused on very practical things. How do we protect the land? How do we manage the land better? And one of the important aspects of that is using fire." Bill McDonald reflected, "You know, the interesting thing is that we just went through a 20-year drought. This country ought to look terrible. The fact that we are working with people who are studying the landscape, the fact that we are thinking about something other than cows and our use of fire have really helped to keep this landscape viable and looking as good as it does."

The MBG is also a great model for public-private cross-boundary cooperation and communication. Prior to implementing prescribed fire, ranchers in the area had many discussions with their federal and state land agency neighbors. "Our experience with the agencies and how they came on board with the fire convinced the ranchers that if they were willing to get out in front on some of these issues, they could set the agenda as leaders and not as just followers," said Brown.

Another area where cross-boundary solutions have been successful is through a recent Memorandum of Understanding (MOU) between the U.S. Bureau of Land Management (BLM), the New Mexico State Land Office and the New Mexico Association of Conservation Districts to allow cooperation and coordination of prescribed fire use between the BLM and private landowners. The MOU reads, "The purpose of this agreement is to outline each agency's role and responsibilities in the development and implementation of prescribed burn plans on joint administrative landscapes of private and public (BLM administered) lands in New Mexico. Whereas the BLM's expertise has been requested and funded to assist private landowners and/or grazing permittees in the development of a burn plan for his/her property and public grazing allotment to maintain overall landscape health and habitat quality for these lands."[8] Jesse Juen, former New

[8] Memorandum of Understanding between United States Department of the Interior, Bureau of Land Management, New Mexico State Office and New Mexico Association of Conservation Districts regarding BLM Prescribed Fire Expertise for Private Landowners Across Landscapes, BLM MOU-NM-931-2017-008, 2017. Accessible at Western Landowners Alliance, https://www.westernlandownersalliance.org/blm-mou-nm-931-2017-008_nmso-nmacd-mou-for-fire-05172017-bmr-07_0511741/.

Mexico director of the BLM explained, "This MOU provides landowners another option among many for resources to plan burns and carry them out should they want BLM to assist."

Some landowners are even finding new and different markets for their timber. "Another increasing and promising development is the growth of the small wood-miser type mills that give some landowners a viable marketing option," explained Randy Mannix. "They are paying more per ton than the bigger mills are right now." Mannix has also seen an "increase in value of round wood" in his area. "The price per ton for lodgepole whips has surpassed the value of stud-logs, which has helped us personally." Round wood is used primarily for post-and-pole material for fences.

Ranney has also found a new potential market for the timber coming off Ranney Ranch. She has been unable to create a local market, but she has been approached by a company out of England that is seeking to import cleared juniper for a power plant required by a European Union directive to phase out fossil fuels by 2025.[9] As Ranney explained, "They are currently purchasing and shipping cleared juniper out of Texas; New Mexico is still a bit too far away but may still work as they really like the low sulfur content, very dry environment and high BTU of our wood."

While bright spots in forest health and management can be seen throughout private lands in the West, landowners can't do it alone. Cooperation between the public and private sectors, economic drivers and supportive public policies at the local, state and federal levels are key to their success.

Beyond Forest Health

It's not just forest management that presents a challenge to landowners. Most landowners in the West are managing highly diverse landscapes, including forests, grasslands and wetlands. They are faced with the challenge of managing these varied ecosystems for multiple ecological and economic goals, ranging from restoring and maintaining wildlife habitats to running a viable livestock operation; from providing much-needed ecosystem services (clean air, clean water, carbon-rich soils) to meeting their financial bottom lines.

Craig Taggart commented, "It's amazing what it costs to keep a property this size running and try to improve the land, rather than just maintain it." Every landowner juggles many factors to keep an operation running and financially viable. For Nancy Ranney, this requires a little creativity in creating diverse income streams. "Grassfed beef, rentals and wind energy are all in the picture of how to keep the ranch afloat," she said. "This is an enormous challenge. We struggle with this daily."

Despite the many challenges to keeping Western working lands intact, it is critical that we do so. In addition to sustaining rural communities throughout the West, these lands carry the burden of providing ecosystem services—such as water filtration and storage, clean air and soil carbon sequestration—that cities and other paved urban areas cannot provide. Moreover, private working lands provide critical wildlife habitat. According to the American Forest Foundation, a national nonprofit organization of conservation-

[9] Drax Group, based out of North Yorkshire in the United Kingdom, currently generates 68 percent of its power from burning wood pellets: https://www.theguardian.com/business/2017/jul/19/drax-coal-free-future-pre-tax-loss-power-station.

minded landowners, more than two-thirds of federally-listed threatened or endangered species exist on private lands.[10]

Along with many fellow landowners and managers, Beau Larkin recognizes the urgent need for ranches to be economically viable in order to keep working lands intact. While managing for forest health is important, the constant pressure to sell lands off for development poses an even greater threat. "The real problem is that development is forever," he said. "You can make a forest look like the moon, and a hundred years later the forest will be back. This is not the case once the land has been subdivided and developed."

The biggest threat to healthy forests, thriving wildlife and land connectivity in the West is the loss of private land to development. For these working lands to remain intact, and for our Western forests to be restored and resilient in the face of wildfires, landowners need public policies and economic drivers that enable them to keep lands healthy and productive while remaining economically viable.

Sid Goodloe and other landowners throughout the West understand that land health and economic prosperity can and really must go hand-in-hand: "If you don't improve your land health, you don't improve your income," he said. "We just have to utilize all the natural resources we can in a sustainable manner. In fact, it's more than sustainable. I am not too happy with the buzzword 'sustainable' because it means staying the same. You have to be sustainable plus improvement and increased production and land care, land health; these are the things that are important to us. We want to keep the land improving all the time because when we got here it was in a debilitated condition. Sustainability doesn't mean anything in that condition. You have to care about land health."

[10] American Forest Foundation 2018, *Protect At-Risk Wildlife and Fish on Family Forestland* (webpage). https://www.forestfoundation.org/endangered (accessed June 6, 2018).