**Prescribed Fire on Private Lands**

*A WLA Online Practitioner Exchange*

**Webinar Summary**

The Western Landowner’s Alliance hosted a second webinar on private-lands forestry in the West, this one with a particular focus on the use prescribed fire. Five panelists joined us, representing a variety of Western states. **Ron Hvizdak** served as the District Fire Management Officer on the Rexford Ranger District of the Kootenai National Forest of Montana before he retired in 2006. **Jeremy Bailey**, based in Utah, has served as the Fire Training and Network Coordinator for The Nature Conservancy since 2008, and is the current Chair for the Coalition of Prescribed Fire Councils. **James Fischer** has been the forester on the Trinchera Ranch in southern Colorado since 2006. Prior to this role he served with the Colorado State Forest Service and the Colorado Prescribed Fire Council. **Doug Boykin** has been the Socorro, New Mexico District Forester since 1992. He also runs New Mexico’s Tree Farm Program and serves on the New Mexico Prescribed Fire Council. Finally, **Don Decker** is the District Conservationist for the Douglas, Arizona Natural Resource Conservation Service Field Office, and the NRCS liaison to Malpai Borderlands Group, an Arizona-based landowner nonprofit.

Panelists shared insights from their own careers and experiences, offered their perspectives on the various barriers to using prescribed fire on private lands, and possible solutions for how to move forward. Discussion topics ranged from liability issues and costs associated with burns to post-fire noxious weed growth, collaborative approaches to burning, cross-boundary logistics, public perception, and more.

*“Eighty percent of US vegetative communities are dependent on fire, and at some point in their life cycles require or expect fire to move through them.” Jeremy Bailey*

Panelists agreed that fire is an effective and cost-efficient method for the management of healthy, resilient forests on private and public lands. Jeremy Bailey pointed out that most ecological communities actually depend on fire as a necessary part of the natural life cycles. Pasturelands and prairies are a good example: in the absence of fire, these wide-open landscapes essential to migratory bird species can very quickly be overrun by trees.

Despite the natural role of fire in healthy landscapes, a number of current barriers make it tough to get fire on the ground, among them public perception. A long history of fire suppression in the West, combined with consistent Smokey Bear messaging supporting and enforcing these management policies, have resulted in an overarching sense among the public that “fire is bad.” Landowner associations including prescribed fire councils and nonprofits are working to change that misperception through public outreach and education, but these efforts take time.

Concerns with liability emerged as another prominent theme. Panelists discussed landowners’ right to burn and the varied state and federal laws outlining the process enabling burns. Adequate liability insurance is difficult to acquire in most regions, and lack of clarity around who carries the liability for different circumstances—including the possibility of an escape—can sometimes cause hesitation around the use of fire. Solutions for how to handle liability include creating prescribed burn associations comprised of neighbors coming together to burn on each other’s lands. Such associations have proven successful in a number of Great Plains states, and are growing in popularity in Western states, notably Colorado, New Mexico, and Oregon. Others choose to hire contractors who come with their own insurance, qualifications, and expertise. In some cases, entire communities come together with diverse burn teams comprised of federal, state, county, and private entities. These diverse teams have the ability to burn across fence lines into different land jurisdictions.

*“We need private landowners involved in the councils—they’re open to everybody. That’s one way we can get through these hurdles. Hard to get fire on the ground without buy-in from the public.” James Fischer*

Prescribed Fire Councils now exist in about thirty-five states and have proven to be an excellent resource for landowners. These local and regional coalitions are made of both public and private leaders who work together to promote the appropriate and effective use of fire. State fire councils define and promote laws and legislation and provide many other services, including access to information and resources, phone numbers for permitting, equipment trailers, lists of qualified contractors, sometimes even direct assistance in coordinating burns.

While fire councils can be a critical source of information and assistance in any given region, James Fischer pointed out that landowners and burn crew personnel with the right skills and qualifications are beginning to retire. Finding qualified people to manage or staff a burn often proves more difficult than finding people to do the pre-treatment cutting and thinning. Fischer urged landowners and other interested individuals to join their local fire councils and build the necessary skills to be an active part of the solution.

In addition to state fire councils, organizations composed largely of landowners have emerged explicitly to develop community-level systems and resources to promote prescribed fire and other effective land management tools. One such example is the Malpai Borderlands Group, based in Arizona near the New Mexico border. The MBG came together in the early 90s in part because they felt the need to organize around the use of prescribed fire, which at the time was even more restricted than it currently is. Ranchers wanted a say in how fires were utilized and managed; they wanted a seat at the table alongside agencies making the management calls. And they wanted science to be taken into account. In large part thanks to organizations like the MBG, large acreages in that region of the southwest have been brought back into a more natural fire cycle.

Panelists also discussed the importance of pre-treatment work including logging, thinning, and piling. While careful planning and pre-treatment work lowers both the cost and the risks associated with burning—two other barriers to prescribed fire—taking the time to notify the right list of people before a burn—including local dispatch and health departments, law enforcement, and homeowners in nearly subdivisions—helps ensure good relations within the community.

Post-treatment work is also important. On the Trinchera Ranch, Fisher’s crews burn large piles, then go back in after the burn to mix the larger remaining materials back into the soil. They have created their own low, medium, and high elevation seed mixes that get incorporated into the soils post-burn. Fischer pointed out that thanks to their methods, a burn is almost impossible to perceive two years afterwards.

That said, noxious weed can become an issue if not managed properly. Fischer encouraged landowners to eliminate weeds as much as possible before a burn, which may require the use of herbicides. While the right fire techniques will reduce weeds, fire will not entirely get rid of them. Panelists noted the importance of continued monitoring post-burn to ensure desired conditions persist.

**Questions Asked and Answered**

**How do you manage cross-ownership burns? Who works on the contracts and who controls the fire?**

**Jeremy:** *It’s situation-dependent and different for every burn. Sometimes the landowners lead their own burns and invite others to assist. Sometimes landowners can potentially be compensated by NRCS funding, or sometimes they coordinate with an NGO or a federal agency, with an MOU between parties. Sometimes landowners hire a contractor, and the contractor carries liability insurance. Most private landowners do not have liability insurance, but what they do have is cooperating neighbors, they’ve prepared land to receive fire, they’ve consulted local fire depts. Most landowners take on the liability risk and mitigate that risk as best they can through careful planning and coordination with their neighbors.*

**What experience do you have with noxious weeds post-fire? What solutions would you suggest?**

**James:** *Monitoring, looking ahead before you put fire on the ground. Identify issues on your land and try to eradicate weeds prior to the burn. Stay on top of it. You’re probably going to have to use herbicide to get rid of them afterwards, because they will be there. The right fire techniques will reduce but not entirely get rid of weeds.*

**Doug:** *For salt cedar and Russian olive, go ahead and burn the piles, but you’ll have to come back in to treat the salt cedar whips several times with herbicide, or it’ll come back. Treat sprouts – salt cedar and Russian olive. Once you get those under control, native vegetation comes back in.*

**What are the right “fire techniques” to reduce weeds?**

**Rodolfo:** *That's a simple question with a potential broad answer. It all depends on the type of invasive species present, their composition (established large or small shrubs, grasses, etc.) and distribution (monoculture or scattered), and availability of fine fuel close to them; also, timing of the burn, and previous invasive species removal.*

*In southern Michigan we tend to conduct prescribed burns after initial removal of brush invasive species has taken place during the dormant months and the prescription contemplates a 60/40 dead/green ratio. The idea is to hit the smaller invasive species with a slow backing fire (now our allowed ROS is between 8-16 chains per hour due to either the presence of or being burning in eastern Mississauga rattlesnake occupied habitat—this is a threatened species in MI). So, for us in MI we try to complete the following management cycle, including fire of course as part of it:*

1. *Invasive plant removal: this is a combination of shrub removal by small equipment, particularly on uplands, and brush cutting on wetlands, both with herbicide stump treatment. This may also include spot herbicide applications on invasive grass and forbs;*
2. *If there are large invasive monocultures and after their removal, most likely fire is not going to carry for at least 3 years;*
3. *For those areas that after phase 1 have fine fuel to carry, we tend to apply prescribed burning the following year during the spring;*

*In general, fire only tops-kill most invasive brush (autumn olive, honey suckle, common buckthorn, etc.) which after the burn will re-sprout potentially creating a bigger problem or mess in a few years. If you burn too hot you may affect native plants and some soil may get sterilized, inviting more invasive plants like Canada thistle and others. Sometimes we have to use fire until enough fine fuel is available to carry it and have a decent effect on small invasive plant species, and that may take up to 3 years. In the meantime, follow up control or removal of invasive species is still done.*

*So, our only allowed fire technique now is backing fire with decent fuel consumption, good negative effect on small invasive plants, and good native plant germination stimulation. We only use prescribed fire as the major "natural" disturbance when 10% of dispersed invasive plants occupy a determined area, otherwise fire will be used combined with other restoration management techniques, like the ones detailed above.*

*(Response provided by* **Rodolfo Zuniga Villegas***. Ro is a land steward in Michigan who specializes in the restoring prairies and native grasslands. The slow fire allows the Mississauga rattlesnake to escape.)*

**Discuss the concepts of forest restoration versus fuel reduction: when do they match up, when do they not?**

**James:** *Here on the Ranch I’d say they’re about the same. We’re removing 75% of the understory and breaking up the crowns. We’re trying to replicate what fire would have done on the landscape. We also acknowledge that we’ll have to use fire as a tool to maintain these areas to meet our long term goal for these sites.*

**Ron:** *Here is my take on these two subjects. Forest Restoration is where managers work to get forest ecosystems to a more normal state. However, even a more normal state is open to interpretation. Managers normally try to decide how they want a forest stand to appear based on historical information for a particular site.*

*Fuel reduction is a management technique used to change the way a fire would behave if a wildfire were to enter the stand, generally reducing the spread and intensity of a fire. There are a number of options to achieve fuel reduction.*

*Forest restoration does not necessarily provide fuel reduction. For example, a stand may be thinned to reduce crown density for forest restoration, but if the residual material from the thinning and the existing natural fuel is not treated (removed), there may be no fuel reduction benefits and in some cases may actually increase unwanted fire behavior.*

*Basically, in my experience, just cutting trees does not provide fuel reduction. In most cases, forest restoration that includes timber harvest or thinning should be followed by some type of fuel treatment in order to provide good fuel reduction and reduce fire behavior.*

**Erin:** *The answer to this question is “it depends.” It depends on the ecosystem type and historic/current fire regimes. Before planning or implementing forest restoration and/or fuels treatments, it is important to understand historic and current fire regimes. In ecosystems that historically had frequent, low intensity fires (e.g. ponderosa pine), fuels treatment objectives and forest restoration objectives are often in sync with one another.*

*When planning forest restoration projects, fuels reduction treatments should be taken into consideration. For example, if you are reducing crown density, opening up dense pockets of young trees to allow light into the understory, and/or thinning from below to increase growing space for larger trees, fuels reduction should be a part of the prescription. Depending on how dense the forest, and how aggressive the forest restoration treatment is, fuels reduction could include anything from chipping, mastication, pile and burn, or under burning—or a combination of these methods.*

*Prompt treatment of fuels following forest restoration treatments is critical. There are a lot of examples of wildfire entering stands where forest restoration treatments occurred, but fuels treatments were not an objective, or were not yet completed (e.g. piled but not burned), and the stands experienced higher intensity fires than what would have occurred prior to forest restoration treatments, due to the increase in surface fuels.*

*A stand that has been excluded from fire for well over a century will probably need more than one entry/treatment to achieve forest restoration and fuels reduction objectives. Maintaining these restoration and fuels treatment projects is a critical component, and a long-term plan should be developed for maintenance of these treatments.*

*When planning strategic fuel breaks (vegetation manipulation along strategic roads and ridgelines), fuels reduction objectives may not align directly with forest restoration objectives. Proactive fuel breaks can constrain fire spread and aid fire suppression efforts by providing firefighters better access to the fire and safe locations to establish anchor points and engage in fire suppression. In fuel breaks, more aerial and surface fuels would be treated than in a treatment with forest restoration as a primary goal.*

*However, everything is linked. Fuel breaks can be considered a form of forest restoration, because fuel breaks are helping fire suppression efforts, which could prevent treated or untreated stand(s) adjacent to the fuel break from burning under extreme conditions.*

*I’ve included research on fuels treatments and forest restoration at the bottom of this email. Let me know if there are further questions, or if you need any other information.*

1. *A Rapid Assessment of the Economic and Ecologic Consequences of Alternative Hazardous Fuel Treatments:*<http://www.calforests.org/wp-content/uploads/2013/06/The-Efficacy-of-Hazardous-Fuel-Treatments.pdf>
2. *Basic principles of forest fuel reduction treatments:*

<https://www.fs.fed.us/psw/publications/skinner/psw_2005_skinner(agee)001.pdf>

1. *Interesting example of when forest restoration and fuels treatment objectives are not in agreement:* <https://www.fs.fed.us/rm/pubs/rmrs_p029/rmrs_p029_335_350.pdf>

(**Erin Banwell**, [banwelle@gmail.com](mailto:banwelle@gmail.com), *is a fire ecologist who lives in BC, Canada and works where she is called to assist landowners and managers restore fire to landscapes.)*

**Does the pushback you receive on prescribed fire include the criticism that burning emissions contribute to climate change? How do you address this?**

**Ron:** *While we have never been criticized for contributing to climate change with prescribed fire, studies have shown that prescribed burning actually reduces emissions overall when compared to unplanned wildfire. Prescribed burns are regulated by the Department of Environmental Quality and are only done when smoke dispersal is favorable. Wildfires, on the other hand, take place with no planning and often lead to unhealthy conditions. In addition, emissions from wildfires in forested stands often create far more particulates than prescribed fire due to more material being burned (tree crowns).*

**There is a ton of confusion surrounding liability issues, particularly in joint private/public burns. Can you touch on any state-level or federal efforts to simplify, clarify, and standardize liability issues?**

**Doug:** *For NM – we’re trying to figure out some way to help landowners buy liability insurance, and we’re working on ways to get legislative work done to clarify liability issues within the state. The BLM and Forest Service do a lot of prescribed burns that cross over onto private lands. The leading agency contacts the landowner directly to work out liability issues.*

**Jeremy:** *When people use the word Liability or ask about what their liability is they are generally asking “if the worst case scenario happens am I the one responsible?” In many instances the answer is yes. However, there are a lot of ways to mitigate your liability. So a better question to ask is “once I have decided that fire is an important tool and natural process and I would like to use it, how can I minimize the risk of negative consequences?” Because in general the owner of the land and the person igniting the fire are responsible and potentially liable for damages. Here is short list of ways to reduce your risk, avoid accidents, and protect yourself if they occur:*

1. ***Follow state laws and permitting procedures:****Private land owners are not required to follow National Wildfire Coordinating Group (NWCG) standards for wildfire; but they do have to follow the open burn laws in their state. Each state has different laws and standards for care. Some states like Florida and Georgia have Gross Negligence standards to determine liability where as other states have strict liability. Know and follow the laws in your state. Every state has its own permitting procedures- sometimes you can get a permit from your local fire chief, other states you have to register at a state wide website. Visit the website of your state’s Prescribed fire council and ask one their members how to find out.*
2. ***Have a written plan:****Controlled burns should have a prescription that defines the goals and objectives, weather conditions you may burn under (and conditions you can’t burn under), contact information for local first responders in case you need help, contingency plans in case you need help. The local NRCS and Pheasants Forever are a good source of information about what to include in a basic burn plan.*
3. ***Work closely with your neighbors:****working with your neighbors during controlled burns is important- first it’s always a lot of work and you need some friends who can help. Second, because there is chance your fire could get on their land it’s better if they’re there to help from the beginning.*
4. ***Hire a qualified and insured contractor:****There are dozens of qualified and insured contractors around the country who lead burns on private and public lands. They’re might not be one in your immediate area but you can find them around the country and airfare or drive time to your place is cheap. Expect to pay professional level rates for qualified and insured contractors. To make hiring a contractor more affordable bundle several burns together for larger acreage. If you are burning 50 acres it might cost you $300/acre. But if you are burning 1000 acres it might only cost you $15/acre*
5. ***Watch the weather before, during and after you burn:****Burning during extended drought, or during windy days or not patrolling your fire two days after your complete can all lead to escape fires and negative consequences.*

**Do you know of any conservation efforts that have inhibited prescribed burning? An example might be the sage grouse initiative.**

**Don:** *The Endangered Species Act delayed and almost stopped some large-scale prescribed burns in the Malpai Borderlands Group (MPG) area. The species potentially affected were the New Mexico ridge-nosed rattlesnake and also the Mexican long-tonged bat. With the organization and encouragement of the MBG, large burns were being planned in their habitat. When it looked like the burns were going to be greatly reduced in size and/or made very complicated and expensive to carry out, the MBG was instrumental in bringing in the species experts. Surveys for the snake were funded, experts on the bat’s important food source—agave—were brought out and they shared data with the bat experts. In the end, important snake habitat was identified and avoided. This ended up being a very small portion of the planned burns. Data also ended up showing that the agave population could withstand these planned burns and still leave behind plenty of food source for the bat. Prior to this new research, prescribed fires had simply been avoided in this area.*

**Do you have experience with prescribed burning in the mountain shrub communities (oak brush, serviceberry, snowberry) that are dense and overgrown from years of fire suppression? Are they difficult to control? Is the burn effective at regenerating healthy grasses, forbs, and shrub cover for wildlife habitat?**

**Ron:** *We have done quite a bit of burning in mountain shrub communities that are local to our area. While we don’t have oak brush in this area, we do have bitterbrush, serviceberry, snowberry, chokecherry, huckleberry and several other brush species. The only brush type that poses any difficulty from a control standpoint in our area is bitterbrush. It can get old and decadent with lots of dead material. But with proper planning and preparations we haven’t had any serious control problems.*

*All of our brush and grass species have responded well to prescribed fire and provided great improvements for wildlife habitat both in amount of forage and palatability, especially for big game. The only time we’ve seen where there have been detrimental effects have been when burning in the fall during drought periods where there was not much moisture in the soil. This can be especially detrimental to bitterbrush and rough fescue. Given time, these areas do recover, but it takes a longer period. A key element for all shrub and grass response is for there to be some moisture in the soil for best results.*

**Are there any current efforts to create the mobile prescribed burn crew you mentioned?**

**Don:** *Not that I know of currently. Individual ranchers have had success in putting together small crews for single, small- scale burns. One approach has been to include some neighboring federal land into the planned burn and then have that agency head the planning and burning.*

**How soon can you go in with cattle after a burn?**

**Don:** *A general rule in our area is one year following the burn. The return time should be based upon actual monitoring of the recovery and grow-back. Some burns, in certain years, may not need that much time.*

**What forms of disturbance can be used in place of fire, when faced with regulatory and climate challenges to implementing prescribed burning?**

**James:** *Mastication/Hydro-Axing of woody understory fuels. We are also trying intensive grazing of grasses in timber stands and of course meadows and grasslands.*

**Many landowners and agency personnel in eastern OR are concerned about annual grasses thriving after fire. What are your thoughts on pre- and post-burning herbicide use -- would this be cost prohibitive for most landowners and agency budgets?**

**James:** *I’m not a big proponent of herbicides but realize that there is a place for them in management. It’s a case-by-case call. Pre- and post-monitoring for noxious weeds is essential. Timing and firing techniques can reduce or eliminate the amount and type of noxious weeds on a site. It all comes down to planning: what are your objectives for the burn; do the benefits of burning out-weigh the potential impacts of noxious weeds? Yes, it could become cost prohibitive.*

**What are your thoughts on the future of prescribed burning in the Southwest with projected changes in climate? Will it be harder to implement? Will fire play the same management role as it does currently?**

**Don:** *My thoughts are that wildfires will be on the increase here. With the proper pre-planning in place, these fires can be managed for the betterment of the resources. We may get more fire back onto the landscape just through the proper management of our wild ignitions, without having to carry out all that many actual prescribed burns. This has been the case in my area over the last few years. There has been good cooperation between the land-owning agencies and the MBG regarding the area fire plan and their management of wildfires here.*