



SOCIETY FOR RANGE MANAGEMENT

Nevada Section of Society for Range Management Hosts Summer Workshop on Rangeland Fire: Management Before, During and After, Part 1

By Ryan Shane, Resource Management Officer for Nevada Division of Forestry,
and Maggie Orr, Lincoln County Conservation District and State Conservation Commission

Fire and invasives; fire and invasives. You hear it over and over in the current Sage-grouse conversation. Is there anything that can be done about these particular aspects of Sage-grouse management to prevent listing the species? This article is Part 1 of a two-part article; the second will offer specific recommendations to use on the landscape.

Each summer the Nevada Section of Society for Range Management offers a summer workshop and field tour to consider topics important to managing Nevada's rangelands. This June a workshop was organized to help educate members and partners on activities and management of lands at all stages in the wildfire return cycle. On the tour we saw presuppression and rehabilitation efforts by the BLM in the Montana Mountains, heard from ranchers in the Wildfire Support Group and Nevada Division of Forestry (NDF) leadership about future possibilities for such groups, and learned from researchers studying what works and doesn't work to manage areas after fire.

The issues that face us are many, as fire researcher Stephen Pyne says, and sometimes conflicting. Rangelands infested with cheatgrass have too much fire. Where pinyon and juniper are expanding, too little fire is a problem. "Fire-borrowing," which entitles fire programs in the land management agencies to sweep funds from other non-fire programs, has become normal, leaving non-fire related programs paralyzed due to lack of funding. Invasive species/fire feedback loops result in habitat and general ecological health declines across rangelands, and increased annual rangelands result in decreased forage dependability for livestock and wildlife. This reduces economic vitality of rural economies. Finally, rehabilitation and stabilization programs are logistically, technologically, and financially out-matched by the scale of lands needing rehabilitation. In this current situation it is imperative that agency fire and resource staffs work together and learn from each other so that both can be more effective at meeting their program's objectives and mutually accomplish management leading to resilient landscapes.

Opening remarks by tour leader Ryan Shane reviewed progress made since the 2008 Great Basin Wildfire Forum where seventeen prominent rangeland scientists assembled to express their knowledge and make recommendations for achieving ecosystem restoration in the Great Basin (<http://dncr.nv.gov/wp-content/wildfireforum.pdf>). Progress includes:

- The construction of a federal seed warehouse in Ely, NV
- The construction and operation of a state seed bank program and warehouse in Washoe Valley, NV
- The establishment and operation of a state biomass utilization program in Carson City, NV
- Governor Sandoval recently became chairman of the Western Governors Association which has a policy against fire borrowing and is influencing respective legislation in Washington to curtail the

practice.

- The establishment of prime sage-grouse habitat as a third suppression priority for fire agencies immediately behind life and property protection.
- Utilization of targeted grazing to control invasives and wildfire fuel loads.
- Landscape scale risk assessments through Landfire and other data collection programs
- Advances in fire policies allowing fires for resource benefit to burn for ecological improvement and approval to manage separate parts of the same fire differently; one flank may be under full suppression while another is allowed to burn for a benefit.
- Advances in and widespread use of Ecological Site Descriptions, State and Transition Models, Disturbance Response Groups, and Fire Effects in the Great Basin (http://www.fs.fed.us/rm/pubs/rmrs_gtr308.pdf)

This workshop was organized to highlight the localized progress on ideas from the Great Basin Wildfire Forum within the Winnemucca BLM District and private inholdings near the Montana Mountains. Creative strategies are being tried with success. Much is being tried and learned that can be applied elsewhere:

- Implementation of cooperative landscape scale fuels management projects
- Formation of a localized, voluntary initial attack rangeland fire protection association
- Expansion of state programs to address presuppression, suppression and rehabilitation
- Formation of a local conservation organization that continues to implement conservation practices on private lands and serves as a conservation partnering organization
- Understanding more about alternative range seeding and planting techniques to improve restoration and rehabilitation effectiveness
- Understanding how to predict post-fire response and post-fire rehabilitation prioritization using soil seed bank monitoring and analysis procedures
- Implementation of large-scale rehabilitation practices using effective methodology
- Increasing the knowledge and abilities required for implementing targeted grazing, especially related to annual grass and fuels management

Montana Mountains Cooperative Fuels and Habitat Management Plan

The first stop examined landscape scale wildfire presuppression and fuels management in the Montana Mountains area of the Winnemucca BLM District; discussion was led by Derek Messmer, Supervisory Fire Management Specialist, Mike Fettick, Fire Management Officer and Victor Lo-

zano, Associate District Manager. The Montana Mountains represents one of the jewels of the Winnemucca District due to its high quality habitat and healthy ecological status.

Winnemucca BLM used fire models and local knowledge of fires to design a landscape scale project in cooperation with over 40 state, local and NGO partners to enhance fire suppression efforts and conduct habitat improvement projects in the Montana Mountains, an important area for wildlife especially Greater Sage-grouse and Lahontan Cutthroat Trout. BLM proceeded through a lengthy coordinated resource management process which drove a NEPA planning document that covered the entire project area of 346,000 acres. The collaborative group worked together to identify fire and resource risks and opportunities, as well as management approaches to manage and preserve the highly valued grazing and wildlife habitat resources in the Montana Mountains. The group continued to meet occasionally from the agency scoping process to the issuing of the Record of Decision (ROD), which took four years.

The plan offers many options including green strip-ping by mowing brush and applying herbicide to reduce annual competition for remaining and seeded perennials, brown strip-ping by disking to bare soil, relocating roads and troughs out of riparian and meadow areas, aerial and drill seeding in cheatgrass die-off areas, prescribed fire and hand thinning. The plan includes options for grazing to reduce annual fuels or mowed areas along roads where cultural resource concerns do not allow the extensive soil disturbance of disking. Existing high quality sagebrush habitats surrounded by cheatgrass are being protected and /or expanded through the use of herbicides, harrowing, and seeding of perennial grasses to create buffers between highly flammable annuals and highly valued, intact habitats. This has proven to be almost impossible at lower elevations.

BLM has found that 8 oz/acre of the imazapic herbicide Plateau works best; cost effectiveness is an economy of scale; a small area costs less than \$100/acre. They use a fixed wing or helicopter if they want a focused application as the helicopter can put more volume solution per acre. They always spray in the fall when the winds are less and wait for moisture so the herbicide doesn't move off-site; they don't want to spray onto "bug dust" due to soil movement potential. Where cultural clearances are obtained seed can be applied with a drill; otherwise broadcasting with an ATV is used to decrease impacts on artifacts and archaeological sites. They usually use Sandberg's bluegrass, crested wheatgrass and prostrate kochia for seeding green strips. Their monitoring consists of visual assessments to determine whether fuel loads and continuity within the strips would allow fire to carry.

BLM mows strips for fuels management to reduce fuel continuity and total fuel load. The spatial arrangement of strips on the landscape is meant to compartmentalize the landscape from a fire behavior and fuel continuity standpoint; the fuel breaks reduce flame lengths, rates of spread, and fireline intensity, which allows suppression forces to



Stephen J. Pyne is a professor at the school of life sciences at Arizona State University and writes often about wildfire issues. He was quoted in an article by Joseph M. Smith in *The Forestry Source*, April 2014 to say, "We don't have a fire problem – we have lots of fire problems – and we need a lot of solutions to them." He went on to say, "Pyne's point was that 'culture trumps science,' which limits our options for responding to wildfire, particularly on public land.

So what are we to do? Get through it the best we can, said Pyne.

'We're not going to get ahead of this. We're going to have to deal with what's coming at us. Prescribed fire is too complicated, too expensive, [and] too politically cumbersome. We're going to take whatever wildfires we get and we're going to manage those, try to reduce costs, protect communities... we're going to get a lot more fire on the land, a lot of it is going to be really bad, a lot of it is going to be really good,' he said. 'It's not about restoration to a condition we liked in the past, it's not about anticipating a desired future condition we want to get to, it's not about applying science to get from here to there – it's about getting through it.' "We've had 50 years trying to resist fire, 50 years trying to restore it; I think we're looking at 50-plus years of resilience, coming out of it the best we can."

engage. Green strips tend to be about 300 feet wide in big sagebrush communities, although they range from 100 feet at a minimum and greater than 300 feet where fuel loads and continuity dictate. They have found rabbitbrush taking back strips fairly quickly which will require maintenance cycles to be more frequent unless the rabbitbrush is sprayed.

Dollar for dollar the most effective treatment is brown stripping; a 12-foot wide disked to bare soil break along the highway they do with BLM staff and equipment for \$20-\$30 per acre. These must be maintained annually. Along highways through areas with high amounts of cultural artifacts they use herbicide fuel breaks.

Proposed actions of the Montana Mountains project comprise about 14,313 acres of which approximately 3,802 acres exist within previously disturbed areas such as roads or acres already burned or seeded. 10,511 acres will be new disturbance; BLM has implemented 9000 acres; about 5000 acres remain to complete. The original NEPA document was written specifically to allow flexibility in the methods used to meet the objectives as well as the places where the methods could be implemented.

This Montana Mountains project took four years from planning to implementation; maintenance was incorporated into the NEPA so the Winnemucca District can go back at any time and re-treat or re-try where needed. BLM has found it more effective to bundle NEPA under landscape planning as opposed to doing individual project level NEPA. Winnemucca BLM feels comfortable taking on a project of this scale every two years now with their current staffing levels; they are working on another similar plan within the district now.

Rangeland Fire Protection Associations and Legal Support

Local ranchers Erich Hummel and Will Frey of the Wildfire Support Group (WSG) provided insight of their group's evolution through time, relationship with BLM, and current needs to fulfill their mission. The intent of the WSG is to provide nearby, voluntary Initial Attack (I.A.) capabilities for local fires. The WSG was formed after the 1999 fire season because of multiple large fires, limited suppression resources, exceedingly high acreage losses, and numerous un-staffed fires. Local ranchers affected by heavy resource damage and loss proposed an idea of assisting the Winnemucca District to suppress wildfires. The initial concept provided three primary services; quick detection and on-scene size up, accurate local access knowledge and

information, and access to heavy equipment and personnel close in proximity to fight the fire. The WSG consists of local ranchers who are trained in basic wildland fire and act as early detection and suppression resources on remote fires within the Winnemucca District.

When the organization began it had a free ability to respond in an I.A. capacity and members felt successful and effective responding to the small size fire starts. While filling this niche, they can be especially effective during days of multiple fires when local agency fire resources are stretched thin across their jurisdiction or even the region. WSG members trained with BLM and took the refresher class each year. Because of this time spent together, the WSG members and BLM fire staff formed a level of crew cohesion which allowed them to communicate and coordinate making their efforts more effective on the fire line. They were able to stop many fires at small acreages and felt the program really worked; for the local folks it was not a matter if they got paid or not; they didn't want to see the country burn.

A recently employed policy by BLM has somewhat stifled WSG's ability to perform as they have in the past. Now they must wait for a Type 5 (ICT5) incident commander or greater to arrive on scene before they may engage the fire which leaves them feeling frustrated and ineffective at achieving the objective of their organization. To achieve ICT5 status as a WSG member or non-professional fire staff is challenging as the required task books, when issued by BLM, are only good for three years so it is hard for WSG members to complete the books before they expire. This leaves them perpetually at a qualification level less than required to effectively participate in I.A. activities.

Some opportunities were identified by present company related to getting State and Local fire protection programs and districts involved with training record maintenance, training opportunities, and task book completion assistance for the WSG members which would allow them to once again serve in full IA capacity. While the WSG is not a fully recognized Rangeland Fire Protection Association, the opportunity to become one may be near. In Oregon and Idaho, there are state laws that enable these kinds of organizations to have jurisdictions within legally authorized fire protection districts. Perhaps they are ahead of Nevada since they have more state and private lands and a coordinator to track volunteers' status in the fire system. Nevada Division of Forestry's (NDF's) number one bill draft request to the 2015 legislature will be to make sure these possibilities get in place by statute in Nevada to allow authority to be given to local govern-

ments. NDF's new partnership with Humboldt County could help bring the County up to speed to manage such volunteer firefighting efforts. NDF regularly performs prescribed fires in the region; these would be prime opportunities for WSG members to continue to make progress completing task books and achieving levels of qualification needed.

State of Nevada Grows Wildland Fire Protection Program

NDF is in transition today from its previous authorities under NRS 473 to do fire protection and All-Risk (eg. Car accidents, medicals, hazmat, structure fires) responsibilities. By 2015 NDF will be completely out of All-Risk involvement and will just do year round wildland fire suppression. Each Nevada county has the opportunity to join the new Wildfire Protection Program; all will likely have done so by 2015 except Esmeralda and Mineral Counties that have virtually no fire history or risk.

The timing has lined up with the sage grouse issue to the effect that NDF will work with all counties to manage wildfire with a strong IA response to keep fires small and reduce landscape events so detrimental to sage grouse. Pete Anderson, State Forester/Fire warden, said on the tour it is an "exciting time" where roles will develop and positive changes implemented; the state role will be to assist a county to deliver what services they want to see. NDF fire resources will be mobile around the state to respond to disasters and fires. For instance, the fire season tends to migrate from southern Nevada early in the year, up to the western side of the state, then to Humboldt and Elko Counties. There will be much work to strengthen ties of interagency coordination. Wildfire Protection Group positions will be year-round; NDF will also provide fire prevention, presuppression and rehabilitation support, so workers may implement fuel breaks in the spring, operate a fire engine in the summer, and then a drill seeder in the winter.

A huge improvement will be to coordinate work between federal agencies and private landowners; if the BLM or USFS is going to do a project in an area, NDF or NRCS should do something adjacent if appropriate and they have the funds. As land managers, we all need to improve how we select projects to get away from a shotgun approach and put the money where success is more likely to occur. The continuing article on this tour will discuss the specific recommendations offered by tour speakers from the USDA Agricultural Research Service, UNR, and BLM on post-fire rehabilitation strategies and effectiveness.

For more information about the Society for Range Management (summer tours or winter meetings) please see the website at <http://nevada.rangelands.org/>





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By Ryan Shane, Resource Management Officer for Nevada Division of Forestry,
and Maggie Orr, Lincoln County Conservation District and State Conservation Commission

Each summer the Nevada Section of Society for Range Management offers a summer tour to consider topics important to managing Nevada's rangelands. This June a workshop was organized to help educate members and partners on activities and management of lands at all stages in the wildfire return cycle. The previous article presented the presuppression and rehabilitation efforts by the BLM in the Montana Mountains and heard from ranchers in the Wildfire Support Group and Nevada Division of Forestry (NDF) leadership about future possibilities for such groups. In this second of two articles we will learn from researchers studying what works and doesn't work to manage areas after fire.

Horse Creek Ranch Conservation Seeding

Jan Schade of the Wildfire Conservation Group (WCG) presented the benefits and successes of the group including the Horse Creek Conservation Seeding. The WCG is a non-profit organization dedicated to reducing the threat of catastrophic wildfires through methods for reducing cheatgrass and other fuels and implementing effective pre-fire fuels management and post-fire reclamation practices. They accomplish their mission by collaboration with willing landowners, organizations, and agency partners utilizing applied research, demonstrations, and public education. They have received earmarks from Congress as well as grants from NRCS, NDF, ARS, and BLM. Projects implemented by the WCG are spread across northern Nevada at Orovada, Crescent Valley, Kings River and Eureka. One of the applications they use is a Lawson Aerator with a seed dribbler as well as drill seeding, disking, prescribed fire, hand thinning, pile and burning, and herbicide to implement conservation treatments. Seven conservation plans have been written, five are in action. Where the tour group stood was an old potato field owned by Pancho Mquirqiaga which had been double disked to control weeds and bury the seed bank, which allowed the Agricultural Research Service (ARS) to install some trial planting plots; this plan was done at Horse Creek Ranch at the same time as the BLM Montana Mountains Plan.

Charlie Clements, Range Scientist with USDA-ARS, provided specifics of post-fire and seeding within cheatgrass infested areas. At this point, he said, we have no choice but to live with cheatgrass and do our best to manage it and take advantage of the places where it has not yet invaded or has been reduced to establish more dependable and desirable perennial grass and shrub species. The key to establishing a perennial grass stand within areas known to

have annuals in the soil seed bank is to fallow the site for one growing season. This can be done by simply plowing/disking the site in the spring before cheatgrass seed ripens therefore killing the current year's seed production as well as burying a large portion of the un-germinated cheatgrass seed deep in the seed bank and further decreasing cheatgrass competition the following spring. The site is fallowed all summer, seeded to desirable species in the fall, leaving the emerging seeded species seedlings with less cheatgrass competition during the very critical seedling stage. Soil active herbicides also can be used to achieve this on specific locations where wind transport of treated soils to agricultural fields is not probable. Applying the herbicide in the fall of the year can effectively eliminate any fall, winter and spring cheatgrass germination. Seed the herbicide-fallow site the following fall to desirable species and those emerging seedlings in the spring will have less cheatgrass competition and experience higher establishment rates. The fallow technique increases available nutrients as well as providing 40-45% more available soil moisture than the untreated site. It is very important to understand that cheatgrass is the number one killer of perennial grasses at the seedling stage. In areas where it is feasible, like Mquirqiaga's abandoned Horse Creek potato field, the site was disked to bury all of the seeds in the seed bank to prevent germination. In wildland settings, chemical fallow is more realistic to apply using Landmark (1.75 oz/acre), Plateau (6 oz/acre), or Matrix (4 oz/acre). Warning was given about using these products to herbicide fallow near agricultural fields as soil bound with these products can blow from treatment sites to nearby ag-fields negatively affecting their productivity.

Following the mechanical fallow on the Horse Creek Seeding, the site was drill seeded with a variety of native and introduced grass and shrub species. Natives largely failed to establish while 'Ephraim' and 'Nordan' crested wheatgrasses, Siberian wheatgrass, and 'Immigrant' forage kochia established very well. The new release, 'Snowstorm' forage kochia was also tested and performed very well, but was very heavily browsed by the local deer and rabbit population due to drought and associated lack of forage. Given the short viability of 'Immigrant' forage kochia seed and the general lack of seed availability, ARS tested the difference between establishment of kochia using freshly collected seed and one-year-old cold storage seed. There was no difference in seed viability, though results indicate both sources can be used to establish stands, and fresh seed did result in 30% more seedlings per square foot. They also tested the effectiveness of broadcast compared to no-till drill seeding of kochia, with no difference seen. ARS

pointed out that it would be more feasible to seed 1-year old cold storage seed with other species in the fall months rather than waiting until winter to get fresh seed and having to apply a second seeding effort.

In areas without extensive annuals in the seed bank, seeding during the fall/winter directly after fire takes advantage of low nitrogen levels as well as improving seeding conditions by avoiding frozen soils and proper seed placement limited by snow events or muddy soils. This allows seeding to be much more successful by not competing against a prolific cheatgrass seed bank which can be expected to occur one year post fire. Bluegrasses, wheatgrasses, and forage kochia seem to be the most successful species in low elevation sites similar to the conservation seeding location. In Charlie's experience the recruitment of perennial grass species is a very rare episodic event. In addition, perennial grass seeds are very rarely found in a viable state in the soil seedbank, with the exception of Indian ricegrass which will maintain viability for 7 to 9 years. While perennial grasses are very long-lived, they do not compete well against annuals; this is why seeding perennials is so important. The idea must be rehabilitation, not restoration now that annuals are so pervasive on rangelands; he said if you can step from one perennial grass to the next you are getting somewhere.

Success hinges on gauging the level of cheatgrass presence in the soil seed bank to prioritize rehabilitation efforts and pick which techniques to implement the rehabilitation efforts. Soil seed bank monitoring is the only way to accurately gauge these levels, and ARS provided a demonstration of how to collect samples and grow out sampled seedlings in a greenhouse setting. To their knowledge, there are no feasible professional services established in our area yet that can perform these tests; land managers would need to become proficient at performing these tests themselves or get a local high school or other greenhouse owner to assist. Nevada Division of Forestry nurseries have contract services for performing these tests which would cost clients around \$350 per 100 samples labeled and delivered to the nursery. Detailed direction to complete seed bank monitoring by bioassay sampling are available on the Nevada SRM website at <http://nevada.rangelands.org/index.html>. The process is rather simple; gather soil including the litter layer from your plots in small plastic bags to fill a 16 oz cup about ¾ full in the greenhouse. The number of samples collected depends on the available bench space at the greenhouse you will be using to water the samples and record emergence. ARS usually collects 80-100 samples in a one acre plot, but those could be spread across a larger landscape in need

The Society for Range Management (SRM) is "the professional society dedicated to supporting persons who work with rangelands and have a commitment to their sustainable use." SRM's members are ranchers, land managers, scientists, educators, students, conservationists – a diverse membership guided by a professional code of ethics and unified by a strong land ethic. This series of articles is dedicated to connecting the science of range management with the art, by applied science on the ground in Nevada. Articles are the opinion of the author and may not be an official position of SRM. Further information and a link to submit suggestions or questions are available at the Nevada Section website at <http://www.ag.unr.edu/nsrm/>. SRM's main webpage is www.rangelands.org. We welcome your comments.



Charlie Clements of ARS states, "It is very important to understand that cheatgrass is the number one killer of perennial grasses at the seedling stage...the idea must be rehabilitation, not restoration, now that annuals are so pervasive on rangelands; if you can step from one perennial grass to the next you are getting somewhere."

of restoration. Mark the samples and cups (eg. disked, undisked), cut a small hole in the bottom and line with a coffee filter. Wet samples well and count the emergence on the 7th day, pulling the emerging seedlings with the seed still intact. Continue to water and perform this task on the 14th and 28th days. Multiply the total seedlings pulled by nine to get the active seed bank per square foot.

Alternative Seeding Technique Plots

UNR research assistants Amanda Wartgow and Devon Snyder explained their small plot studies implemented by raking and hand seeding to test differences in seeding methods (drill seeding, cluster broadcasting) and seed pre-treatments of agglomeration of adhesive binder and diatomaceous earth around seeds for water retention. Clustering or agglomeration can increase emergence in Indian ricegrass, bottlebrush squirreltail, basin wildrye, and crested wheatgrass. These strategies also increased establishment of Indian ricegrass and bottlebrush squirreltail. In general, clustering or agglomerating rather than simulated drill rows had better results though it was a small scale study which would have to be tested at larger spatial and longer time scales to determine feasibility and effectiveness before endorsement as a preferred rehabilitation practice.

Sagebrush Transplanting Techniques Demonstration

Kent McAdoo of the University of Nevada Cooperative Extension demonstrated the proper techniques associated with planting bare root sagebrush plants. Plants typically had four to six inches of branches and about the same root length. He recommends spring planting in early April to take advantage of soil moisture to harvest wildling transplants from loose wet soil, keeping the roots wet with water and burlap and planting within a few hours. A planting bar works great, a hoe-dad or shovel can be used as well. Press the bar in at an angle and push forward, pivoting at the base and creating a hole with the prying action; insert the plant in the a hole large enough for the roots to remain straight and the soil surface level a little above the crown of the plant. Insert the planting bar two inches behind the first hole and push forward to press the soil into the hole and remove air from around the roots. Then back fill the second hole and tamp. Pull gently on the plant to make sure it is firmly held by the ground. The whole process goes fast when laborers are trained and experienced.

Kent reported there is a recorded 70% failure rate for seeding sagebrush. The largest advantage that can be given to the transplants is control of directly adjacent herbaceous vegetation, which increases survival by up to 300%. In Kent's experiments, planting survival was about half of what can be expected from a comparable native sagebrush stand, so increasing planting densities may be used to offset this difference so that stand establishment densities more closely represent naturally occurring stands. Jackrabbit depredation was significant on his plots. Transplants were more successful on native rangelands

compared to cheatgrass areas and crested wheatgrass seedlings. Nursery stocks were somewhat better at establishing than wildlings but the results from his transplanting trials look good. What was most consistent between his plots was that sagebrush transplant establishment was much better when he controlled the herbaceous vegetation immediately surrounding the transplant prior to planting. The idea is to transplant smaller areas and create islands which will increase in size over time; even one plant that is successful will start an island.

Holloway Fire Low Elevation Rehabilitation Site

The Holloway Fire started 25 miles east of Denio, Nevada on August 5 at 6:30 pm as a result of a dry lightning storm. It began in sagebrush dominated rangeland and grew to 400 acres in 1.5 hours. The lack of roads, terrain, windy conditions, and dry fuel conditions created too much risk for ground resources to take direct suppression action, thereby leaving aerial resources as the primary initial attack. Due to regional wildfire activity, resource orders for additional ground forces were slow to be filled. Fire activity also increased on August 6, resulting in the retreat of forces. Over the couple weeks, rapid expansion of the fire occurred despite increased staffing and resource levels assigned to the fire. By August 25, the weather provided some breaks and containment was achieved at 460,811 acres burned. Shortly after containment, BLM and other partners began working on burned area assessments for Sage-grouse habitat, seeding needs, habitat restoration, livestock closures, and noxious weed management. Part of this process was addressed using Disturbance Response Groups that were developed by Tamzen Stringham at UNR in cooperation with NRCS. Disturbance response groups are a bundling of ecological sites based on similar states and transitions, so the most effective rehabilitation methods can be planned and implemented across similarly-responding ecological sites. With this approach BLM implemented more than 60,000 acres of aerial seedings that included seven different seed mixes. These mixes included a subset of the following species based on site specificity: mountain big sagebrush, Wyoming big sagebrush, fourwing saltbush, prostrate kochia, bitterbrush, blue flax, white yarrow, Palmer penstemon, bluebunch wheatgrass, Sandberg's bluegrass, basin

wildrye, crested wheatgrass, and Indian ricegrass. In addition, 120,000 sagebrush seedlings were transplanted by a contractor and 40,000 more are scheduled to be planted this year in high priority wildlife areas.

At a site up the Nine Mile Road, Derrick Messmer showed us a seeding that was implemented in partnership with NDOW. Further up the road, the tour observed higher elevation burned areas that were co-dominated by bluebunch wheatgrass and cheatgrass with some Sandberg's bluegrass and bottlebrush squirreltail. Some of these sites were aerial seeded, but most were not and generally represented natural recovery.

Post-fire Grazing Management and Research

Winnemucca District uses Emergency Stabilization and Rehabilitation (ESR) objectives and livestock closure objectives, not a set standard of two years after a fire to decide when an allotment may reopen after a wildfire. Livestock closure standards are based on percent of perennial ground cover that should be at the site based on 100% of the low end of perennial cover in the Ecological Site Description. Winnemucca District will be putting this in their new land use plan. They did put the option of fall grazing of cheatgrass in their new vegetation management plan. The BLM did engage one permittee to do some fall cheatgrass grazing on the burned areas, but the agreement was nullified due to the lack of needed infrastructure to keep the livestock in the areas where targeted grazing was the objective. BLM has allowed some permittees back on in less than one year following a fire where Standards were met and the site was pure cheatgrass. This is also true where there were site-specific determinations that a seeding had failed and the site was strictly cheatgrass.

UNR is currently conducting some post-fire grazing experiments on two larger sites, one on the Oregon side at McDermitt and one at Squaw Valley Ranch north of Battle Mountain. They are located in somewhat higher precipitation areas with clay pan ecological sites, so they are not prone to cheatgrass invasion like lands within the Winnemucca BLM District. They are hoping to gain an understanding of the plant community response to grazing and non-grazing immediately following a wildfire, and whether our post-fire management can be more ecologically sound. At the Horse Creek Conservation Seeding, they are looking to graze portions of the area to also study these same effects so that more knowledge can be gained about managing cheatgrass prone ranges after wildfire for benefit of rangeland health.

Nevada Section of Society for Range Management works hard to provide timely and informative tours and workshops about issues affecting all who live and work on rangelands in Nevada. The Section encourages members of the ranching community to participate to allow the scientists and land managers to hear the questions and comments of those closest to the land. Society for Range Management offers a place for open discussion. We hope you will join us to enrich the conversation.

Would you like to learn more?

See:

SRM Tour Summary: Nevada Division of Forestry Wildfire Protection Program

and

Guest editorial, "Wildfire Suppression Borrowing,"
by Pete Anderson, State Forester, Nevada Division of Forestry

on The Progressive Rancher Website
www.progresiverancher.com

