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## Fire Management

# Igniting Fire Use on the Gila NF

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On June 12, 2005 a dry front moved across the Quemado Ranger District in the Gila National Forest distributing lightning strikes all across the parched forest. Janice Stevenson, the District Ranger, was busy coordinating responses to 12 fires that had begun burning across the ponderosa pine and pinyon-juniper forests. The Quemado Ranger District had been doing extensive preparation and planning for implementing a Wildland Fire Use program; and Stevenson was looking for just the right ignition that the fire teams could manage as Fire Use. Over the last couple of years, the Quemado fire crews had managed a few Fire Use fires, but the largest one had only grown to 6 acres. The crews were eager to gain more experience managing a larger fire that could help clean up some of the dense overstocked forests. However, for most of the day the ignitions were in the wrong place - either close to private land or in areas with the wrong combination of topography, fuel conditions, and forest type. Stevenson had no choice but to call in suppression crews to quickly extinguish these fires.

Nonetheless, one fire in an area around Fox Mountain was a promising candidate for Fire Use. The resource benefits were obvious. The ponderosa pine forest on the mountain was a “dog- hair thicket,” small trees in need of thinning. However, there was a private property in-holding nearby, and Stevenson was not completely ready to commit to a “go” decision for Fire Use. Soon the decision was made much easier. Another lightning strike ignited a fire in an area with similar resource conditions, but in a much less sensitive area for managing a Fire Use fire. Stevenson immediately decided to suppress the Fox Mountain fire and manage the second one as Fire Use. The second fire eventually became known as the Johnson Wildland Fire Use Fire and it burned from June 12 till August 29, covering 11,260 acres. Stevenson says that the benefits to the forest of the Johnson Fire are now obvious to her. “The Johnson Fire accomplished a level of

fuel treatment we would never have been able to afford. A lot of great work can be done with a good Fire Use fire. It is really the only way we are going to have an influence on the big picture of forest restoration.”

The successful management of the Johnson Fire Use Fire can be directly attributed to training and preparation. Stevenson and her staff were committed to ramping up their Fire Use program, but they also wanted to make sure they were approaching Fire Use correctly. Stevenson first made sure that she had the right staff in place with the right training. Then, the staff approached data-collection and mapping of vegetation, wildlife habitat, cultural resources, roads and access routes in a detailed and systematic manner. When the right ignition came along, Stevenson knew she had the staff and planning in place.

The Quemado planning process is being hailed as a model for how to start up a Fire Use program. Tom Zimmerman, one of the Forest Service’s leading experts on Fire Use, says that other units can learn from the experience of the Quemado District. “What the Quemado District has accomplished is a stellar example of Fire Use pre-planning. They documented all of their concerns, needs, values, and limitations. Now when they get an ignition they can go through each easily and develop recommendations. It has really made them aware of their capabilities.”

Along with awareness comes confidence. “When I first came to New Mexico I dreaded fire season. The skills and experience were not there. Now I look forward to it because I know we are ready,” says Stevenson.

### **A Tradition of Pushing the Envelope**

While fire managers across the country had experimented with allowing natural fires to burn (under controlled management) for decades, it wasn’t until the late 1960s and early 1970s that agencies adopted official policies that allowed managers to manage fires rather than automatically shift into suppression mode. Until 1995 Fire Use was referred to as “prescribed natural fire;” and it was only used in a few remote wilderness areas in the West. The Gila National Forest was one of those areas that began experimenting with managing natural fires in the 1970s as fire managers began learning the benefits of allowing fire to play its natural role on the landscape. They gained a great deal of experience, allowing a few thousand acres to burn each fire season (For an excellent history of Fire Use on the Gila read “Keepers of the Flame,” High Country News, November 8, 2004).

While the early Fire Use experiments were cautious, fire managers on the Gila soon learned that they could let fires burn hot early in the season before the monsoons, and that the land responded in dramatic ways afterwards. The fires increased landscape diversity by clearing woody debris and groundcover, and created new meadows and habitat types that had previously been choked under

layers of pine needles and other surface fuels. Watersheds rebounded as thirsty trees were thinned and removed. As the benefits of fire became obvious a culture of Fire Use began to develop among the fire and land managers that worked on the Gila. Soon, large Fire Use fires were burning on the Gila including the 1995 Bonner fire which covered over 27,000 acres and the 2003 Boiler fire which burned over 58,000 acres.

In recent years, Gila fire managers have even begun managing Fire Use fires outside of wilderness areas in what is referred to as the wildland-urban interface. According to Marcia Andre, Forest Supervisor for the Gila, the forest burned 115,000 acres in Fire Use in 2005 and 80% of that acreage was outside of wilderness. This is a revolutionary development in a national fire community dominated by a suppression mentality. In fact, in many years the Gila accounts for up to half of the total acreage burned in Fire Use nationwide, a clear indication of the unique tradition, skills and experience that have developed on the Gila, almost in isolation from national approaches to fire management.



*Janice Stevenson on the Johnson Fire Use Fire, July, 2005*

Janice Stevenson came to the Gila National Forest in 2000 from northern California. She had never worked on a Fire Use fire prior to her assignment as District Ranger for the Quemado Ranger District on the northern end of the Forest. She says that she immediately felt the pressure to get a Fire Use program underway. The Quemado District was unique on the Gila in that it had not implemented Fire Use in the past. The district contains a lot of private property in-holdings and no wilderness areas. It is not an easy place to manage natural fire. “I

wasn't comfortable with the skills we had here on the district for managing a large Fire Use fire. While I felt some pressure to implement Fire Use immediately I pushed back and said that we need to focus on planning and training before we went too quickly into implementation.”

Stevenson's efforts paid off. She brought in a new fire management officer, Dennis Fahl, who had extensive experience working with Fire Use elsewhere on the Gila. She hired other staff members with experience and sent existing staff to Fire Use training. After the key staff was in place, the fire team initiated a comprehensive planning process, collecting data on all of the factors that would be needed to make rapid decisions on “go/no-go” with Fire Use. Stevenson and her interdisciplinary staff put together datasets and basemaps showing

topography, vegetation types, access routes, powerlines, private in-holdings, and sensitive areas (archaeological sites, historical structures, spotted owl habitat). “When it is decision time I have to be focusing on what resources [firefighters, specialists, aircraft, etc] are available locally, regionally, and nationally. I also have to be on top of the weather forecasts. I want the rest of the information at my fingertips as much as possible. I don’t want to have to be tracking down a biologist or an archaeologist while there are firefighters in the field waiting for a decision.”

The first step was to set up a plan to defend the boundaries between the forest and private land both within and outside the forest. The amount of private land in and around the Quemado Ranger District makes it a sensitive area for Fire Use. The fire team is working with the State District Forester on agreements with private land holders for being able to carry fire across their holdings while protecting structures and infrastructure. When those agreements and policies are in place it will greatly expand the area on the Quemado District available for Fire Use management. “There is strong interest and acceptance among the private landowners in this area for carrying fire across private lands. I credit that with the time spent talking to landowners about fire, and also in positive experiences many have had as grazing permittees on the district lands,” says Stevenson.

In a survey done of private landowners in the area 39% were completely comfortable with having managed fires carried onto their lands. Another 29% were supportive of the idea, but had some reservations. While only 32% were not supportive of the idea. That is a surprising 68% of the area landowners who are open to the idea of having fires managed across their property (Source: Doug Boykin - New Mexico State Forestry Division).

Next in the planning process, the team identified sensitive areas within the district for protection. These include historical structures, archaeological sites, and sensitive wildlife habitat. Stevenson says that the district has a limited amount of mixed conifer Mexican spotted owl habitat. They are always careful about only letting fire get into those sensitive areas at the right time of year under certain conditions. “We definitely do not want a stand replacing fire in those areas. We want to make sure that we don’t cook the pines or the conifers.”

The key to successful pre-planning is involvement of all of the staff, not just the fire personnel says Dennis Fahl, fire management officer for the Quemado District. “You have to get your range and watershed specialists involved and all of your *ologists*. If you don’t get full involvement it is hard to do. The collaboration comes in the pre-planning – getting buyoff from everyone on the plan – then you start working with landowners, permittees and so on. That way, everyone shares in success and failure because everyone owns the plan.”

## Managing for Fire Use

Declaring a Fire Use fire is not an easy decision to make. It is a long term commitment of weeks and months of monitoring and taking management actions. The Johnson Fire on the Quemado lasted for 10 weeks. Other Fire Use fires have been known to burn for as long as five months. Bill Hahnenberg, a Fire Use Incident Commander for the BLM in Colorado, says, "It is hard to rest on the weekends when you have a Fire Use fire rolling around out there. You have to be constantly aware of changing conditions. A lot of duty officers are not comfortable with that level of commitment. A suppression decision is much easier. In most cases, you make the call, and a few days or a few weeks later it is off your desk."

After an ignition is detected, the line officer has 8 hours to approve a fire for Wildland Fire Use. Stevenson usually has the crew out scouting: looking at all sides of the fire, assessing access roads, looking at the vegetation between the fire and the surrounding private land, and feeding lots of information back to the office. However, she rarely uses the full the 8 hours to make the call. "I try to make the decision quick so the crew can kick tail on it if we are going to put it out. If I wait too long I risk exposing them to a more risky situation."

Once a fire is approved for Fire Use it goes into a three-stage planning process based on changing fire complexity and management needs. The first stage is essentially a size-up of the fire and an assessment of the risk of continuing to manage the fire as a Fire Use fire. The duty officer looks at forecasted weather, forecasted fire behavior, availability of resources, and so on, and determines appropriate management of the fire. The Johnson Fire quickly moved through



stage 1 and 2 to become a stage 3 fire, as the staff determined that it was going to grow relatively rapidly and last for most of the summer.

The Quemado crew established the perimeter (or Maximum Manageable Area in Fire Use lingo) for the Johnson Fire and fired off roads and built fireline to the fire in the area

where needed. As the fire approached a mountain dominated by mixed conifer the crew went up to the top of the ridge and backfired with drip torches to let it burn cool downhill. "We blew out a few small holes on that ridge, but if we would have let it go, it would have raced up and caused a stand-replacing fire

throughout that conifer stand,” says Fahl.

One of the keys to successful management of Fire Use fires is setting trigger points – getting out front of the fire and planning what actions will be taken when the fire reaches certain points. The team has to decide where to establish firebreaks and where to backfire. “You always have to be out in front. We try to use existing roads to check the fire where possible and always stay out in advance of the fire.” says Stevenson. The fire team also has to establish a communication plan with local communities – getting out and meeting with concerned residents, talking to the media, signing public roadways.

With limited resources often stretched across fires in the Southwest and elsewhere, there has to be a clear plan of where and when things get done, and who is doing them. “Compared to suppression fires where the resources deployed on the fire grow and then drop off, Fire Use fires go through ebbs and flows of activity depending on what is going on and the actions needed. The fire may sit for a while and do little, and then pick up and start moving. You have to be ready when that occurs,” says Fahl.

There is a perception in the firefighting community that working a Fire Use fire is not as exciting or glamorous as suppression. However, Stevenson says that once suppression teams work a Fire Use fire they see the benefits and become some of the biggest proponents. “We have these hotshot teams that come in pretty skeptical, but by the time they leave they find out that they get to use their same skills on Fire Use – backfiring, lighting from the top, creating firelines, and fuel reduction – and they do it on a larger scale since the perimeter is larger. We just plan on winning them over one crew at a time.”

### **The Future of Fire Use**

Most proponents of Fire Use have seen an increase in support for managing natural fires, and many say that attitudes in the fire community are shifting away from a complete suppression mentality. Researchers at the Aldo Leopold Wilderness Research Institute provided some statistics that show the growth in Fire Use. From 1996 to 2000, about 100,000 acres were burned nationwide in Fire Use. From 2001 to 2005, about 300,000 acres were burned in Fire Use.

Even more telling is the growth in the number of land management units that have now incorporated Fire Use into forest management and fire management plans. A prerequisite of implementing Fire Use on public lands is incorporating planning for Fire Use into a unit’s fire management plan and identifying areas eligible for Fire Use. The statistics show that in the 1970s there were only 6 wilderness units across all the federal land management agencies that had plans in place for implementing Fire Use. In 2006, 122 of the 407 Forest Service wilderness units have plans in place for implementing Fire Use, and 25 of the 55 National Park Service wilderness units also have plans in place.

More people have become familiar with the benefits of Fire Use but the increasing interest in Fire Use is likely being driven by the forest and climate conditions that are creating the massive wildfires and a crisis in forest health. Carol Miller, of the Aldo Leopold Wilderness Research Institute, is a leading researcher on Fire Use. Miller suggests that we are moving in a direction that dissolves the distinctions between suppression and Fire Use. "Policy may be changing in the future to recognize that there is only one type of fire; and each fire has appropriate management responses depending on conditions."

Miller says that some of the most important research related to Fire Use is being done in social science, looking at the fire decision makers and the environment in which they are working. "Who are these people that go out on a limb and push the envelope with fire? What can we learn from their organizational environment? You can't just focus on fancy tools and data. There will be no more Fire Use without the decision makers. It comes down to if they feel comfortable."

Anne Black, another researcher from the Aldo Leopold Wilderness Research Institute, agrees. She says that Fire Use is about creating resource benefits through putting fire on the ground, but getting there is mostly about organizational capacity. Black is starting research that resembles participant observation from cultural anthropology, working with people on the ground when the action is occurring. "We will really only understand this when we see what is working in the field and what the problems are."

Janice Stevenson is one of the leaders out in the field pushing the envelope and making the difficult decisions. As I interviewed her earlier this summer, lightning crackled in the distance and calls began coming in over the radio from nearby lookout towers. She continued answering questions, but her eyes began wandering to the maps lining her office. I suddenly realized the enormity of the decisions she made on a regular basis. I asked her if there was anything that could be done to make the decision easier, to give line officers some incentives and support for making the 'go' decision. She paused for a second and said, "No. Incentives have no place in Fire Use. I fear that people would start doing it for the wrong reasons. It doesn't take too many bad incidents to shut down a program. You do Fire Use because it is the right thing to do in being a good steward of the land. Fire Use is exciting and gives me a rewarding feeling; that is incentive enough for me."

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