

Why We Burn

By Gene Twaronite

While public acceptance of prescribed burning in the greater Prescott area is largely positive, a very small but vocal minority of area residents continues to voice its opposition. Speaking for the Prescott Wildland/Urban Interface Commission, of which I am a member, I wish to share some perspectives on why we burn.

The Commission known as PAWUIC is a collaborative group composed of volunteer citizens and member individuals from city, county, state and federal agencies. Since its formation in 1990, its chief task has been to identify, prioritize, and guide the management of wildland/urban interface practices in the greater Prescott area. A major part of this task is helping citizens become more aware of issues related to wildfire and its effects. Newcomers to our area often lack understanding of what it means to live in the interface and need to be informed. But established residents also need to be reminded of our wildland responsibilities, even if this means occasionally enduring smoke and runny eyes.

In speaking to various groups, I point out that fire is a natural part of our environment. People in the audience nod their heads in agreement, but I wonder: do they truly understand the implications of this fact?

The vegetation types in our area – ponderosa pine, pinon-juniper-oak woodland, chaparral, and grassland – all evolved with fire. Fire makes them what they are. Though sometimes erupting as large crown fires consuming entire forests, “pre-European settlement” fires more often occurred as low intensity, surface fires. These fires

consumed excess needles, branches and other fine fuels, and recycled their nutrients. They stimulated wildflowers, grasses, and forbs, providing food and openings for wildlife. They maintained the park-like spacing so characteristic of our Southwestern forests and woodlands by killing off tree and shrub seedlings and saplings that would otherwise grow up too dense. They seared and pruned away lower branches that might carry fire into crowns. They kept insect eggs and diseases in check while reducing competition for remaining trees, thus making them more resistant to drought and beetles. And sometimes they even replaced whole stands of trees or shrubs, creating diverse mosaic landscapes. Without the vital shaping process of fire, our vegetation types are like dunes without the wind, or animal populations without predators.

But wildfire is also messy, smelly, and sometimes destructive. Historically wildfires often caused catastrophic damage to vegetation, watersheds, homes, property and life. Public sentiment demanded action. That is why the U.S. Forest Service embarked on a primary mission, almost a century ago, not only to suppress but to *eliminate* all forest fires. Other agencies followed suit. Smokey Bear messages convinced the public that all forest fires should be prevented. And years of unmanaged grazing also added its toll, removing the fine fuels that could safely carry fires through forests and replacing them with hotter-burning shrubs and trees.

Despite some early voices advocating for the possible uses of fire as a forestry tool, and despite ecological research regarding fire's essential natural role in ecosystems, political pressures continued to favor the policy of suppression. Too much had been invested in putting out fires, and too many expensive homes had been built in the interface. It wasn't until the 1990's that a widespread consensus emerged among federal

land managers that, while suppressing unwanted catastrophic wildfires was still necessary, trying to eliminate fire completely from western forests was a huge mistake.

Here in the Prescott area, for example, the *Prescott Basin Fire History Project* (Sneed, P., L. Floyd-Hanna, and D. Hanna, 2002), conducted for the Prescott National Forest by Prescott College, concluded “that fire was a keystone process in several dominant vegetation types.” Using cross-dated, tree ring fire scar samples, the study also confirmed “with solid data what many forest managers and fire fighters suspected – namely that fires burned much more frequently, but with less intensity, than they do today.” Its authors supported a systematic, integrated return of fire to the Prescott Basin in order to return and maintain ponderosa pine and other ecosystems that are ecologically healthy and more resistant to crown fires.

Because of this attempted exclusion of fire for so long, fire managers have become increasingly alarmed at the dangerous overloaded fuel conditions that have developed not just here in Prescott but throughout the West. According to one estimate, half of all western forests have disrupted natural fire regimes (the characteristic total pattern of fires within a vegetation type as described by intensity, frequency, and effect on vegetation). Fuel loads, as a result, have increased dramatically in the past 100 years – by nine times more in central Arizona. In the Prescott Basin area wildfires are increasing in number, size and severity to such an extent that the Ecological Restoration Institute of Northern Arizona has identified it as being “in grave danger of catastrophic fire,” with one of the highest interface fire risks in the Southwest.

Climate change is also having an impact. According to a study published in *Science*, August 2006, wildfire activity in the western United States has notably increased in the

past two decades. The wildfire season now runs 78 days longer, while the total area burned is 6.5 times larger than it was back in the 1970's and early 1980's.

Faced with these grim numbers, the U.S. Forest service began to follow a policy of restoration forestry in the 1990's. Its aim was to restore ecosystems to a more natural diverse state that was more resilient and resistant to wildfire by employing a combination of practices such as fuel reduction, selective thinning, and natural and prescribed burns. Today, the Forest Service, National Park Service, and Bureau of Land Management all have fire management plans detailing exactly how and when fire will be employed.

As a management tool, prescribed burning has much to offer. Not only does it confer upon the landscape the ecological benefits that fire suppression took away, but it's also much cheaper than mechanical thinning. Two recent studies by the Forest Service also suggest that mere thinning, when unaccompanied by the burning of brush or debris, may actually increase forest fire damage rather than reduce it.

This is not to say that returning fire to a landscape so altered by development will be easy. "Man is by nature a political animal," warned Aristotle over 2,000 years ago, and little has changed since. Today, there are those who would argue in the name of public health against using prescribed burns, pointing to the hazards of fine particulate matter produced by wood smoke. Or they bring up public safety, citing examples of things getting out of control, such as the National Park Service's prescribed burn in 2000 that burned 200 homes in Los Alamos, New Mexico. As always, some will complain merely because of personal inconvenience. And a few will be against any human alterations to the wildlands.

A little perspective is in order. According to several recent studies, it is estimated that prior to 1900 fires burned about 20 million acres per year in the western United States. This is about eight times the annual combined *average* of wildfires and prescribed burns, and more than twice the 9.5 million acres that have so far burned this year in the entire U.S. including Alaska (as reported to the National Interagency Coordination Center).

Geologist and explorer, John Wesley Powell, described the late 19th century West as a region of smoke and fire. Dr. Thomas W. Swetnam, Director of the Laboratory of Tree-Ring Research at the University of Arizona, in studying fire scarred tree ring samples, found that in the year 1748 fire occurred in 41 of the 63 sites he studied. He concludes: “If you were in the Southwest in 1748, it would be extremely smoky.”

In the past couple of months, according to Curtis Heaton, USFS Forest Fire Management Officer for the Prescott National Forest, about 4,000 acres have been prescribed burned over the entire forest out of an annual target of 11,000 acres. Of the hundreds of calls he’s received, only a couple of dozen have been openly critical. Most people just want confirmation or explanation of the burn, and are satisfied when given this information. That’s a really small number when compared to the 85,000 residents in the Tri-City area.

In the words of Dr. Swetnam, “We can either have regular, planned, low severity surface fires and smoke, or irregular, unplanned crown fires and smoke.” The choice is ours.

Current information on prescribed burns can be found at the following web sites:
Prescott Area Wildland Urban Interface Commission: <http://www.regionalinfo-alert.org/>

Prescott National Forest web site: <http://www.fs.fed.us/r3/prescott/>

(Note: In addition to the reports mentioned and various Internet sources, information for this article was also taken from the excellent book on restoration forestry, *Mimicking Nature's Fire: Restoring Fire-Prone Forests in the West* by Stephen F. Arno and Carl E. Fiedler.)

Next: The air quality issues of prescribed burning and what the USFS and other agencies are doing to address them.