WHERE THERE'S SMOKE THERE'S A FOREST

By Gene Twaronite

First, the bad news. Fire is inevitable in our wildlands. Despite our best efforts, we will always have wildfires. Prescott National Forest averages 90 wildfires per year, with about 60% caused by lightning. And to keep future fires from becoming catastrophic and to improve forest health, we will start more fires in the form of prescribed burns, which means even more smoke.

Forest fire smoke is definitely not good for you. Just ask any veteran wildland firefighter, whose increased risk of future respiratory problems or cancer is just one of the prices we exact for the privilege of living near the forest.

Forest combustion is a messy, inefficient process. Of particular concern are the fine carbon particles produced, known as particulate matter. According to a National Weather Service web site, 90% of the particulate matter from prescribed burns is less than 10 microns (a human hair, for example, is about 70 microns thick). This is small enough to be suspended and transported in the air, affecting air quality for great distances, and small enough to be inhaled. 82% of these particles are less than a micron, small enough to lodge in the alveoli of the lungs. Not something you want to breathe every day, if you can help it.

Fortunately, we don't have to. Here in the greater Prescott area, fall is the main season for prescribed fires, for that is when weather and vegetation conditions are at their most favorable to minimize risks, meet air quality standards and achieve resource objectives. According to the Prescott National Forest web site, agency employees are

well aware that smoke is a vital concern to many residents. And they are dedicated to providing accurate, "real time" information to residents and visitors so that people can better prepare themselves for the possible effects of smoke. Prescribed burns are conducted in strict compliance with National Air Quality Standards and guidelines of the Arizona Department of Environmental Quality. Using a portable, particulate-sampling device called a "dataRAM," fuel managers establish a baseline by recording the local air quality before starting the burn, then continuously monitor the air during the burn.

Forest Service managers also try to limit smoke from prescribed burns by scheduling fewer burn days to shorten the season and by burning more acres each day to create a larger smoke plume; such larger plumes are more likely to disperse at higher elevations, reducing the chance that smoke will settle into Prescott Basin or Verde Valley. They avoid burning on days or seasons when smoke is most likely to be carried into smoke sensitive areas, and try to schedule burns on days when winds will most likely carry the smoke away from such areas. They adjust burning patterns and operations to provide for optimum venting and smoke dispersal, and plan flexible burning schedules to take advantage of changing weather and vegetation conditions. And they burn only the amount of fuels (vegetation) necessary to achieve their objectives, including restoring the landscape to a more natural, mosaic pattern of burned and unburned areas.

Federal and state agencies in our area have all worked hard to inform and involve the public. A regional survey undertaken in Yavapai County ("Public Responses to Wildland Fuels Management" by Dr. Bruce Shindler and Dr. Mark Brunson, 2002), found that a majority of residents surveyed "agreed that managers should be able to use *any means necessary* to reduce fire risk, and most agreed that prescribed fire effectively

reduces fuels … Citizens also place *considerable trust in agencies* such as the USFS, NPS, and BLM to make good decisions regarding fire and to implement fuels management practices." Though the Prescott area has long attracted people seeking cleaner air and relief from respiratory problems, the study found that smoke and its effects were not much of a concern in general terms; smoke was, however, of greater concern the closer the prescribed burning was to home.

Another thing to keep in mind is that while a prescribed burn does produce smoke, the amount is far less than that produced by an uncontrolled wildfire. As we have learned from past experience, the smoke from such wildfires can come at any time, even in winter.

For ASU fire historian, Stephen J. Pyne, the issue comes down to values and how we relate to the surrounding forest. To allow wildfire its natural place in the landscape will not be easy. "Suddenly there are all sorts of public health, public safety and environmental problems … It's a long, hard slog."

But if we wish to see the forest truly – not as some romantic, fanciful image of an unchanging place that exists only to surround us with pleasant scenery – we need to see the smoke for what it is. A sign that somewhere the forest is burning, doing what it must. A sign that we live in fire country.

For those of us who choose to live in the wildland urban interface, the question remains: can we learn to live with the smoke? Thomas W. Swetnam, Director of the Laboratory of Tree-Ring Research at the University of Arizona, cites several examples from history to show that it is possible, if we are willing. Until recently, rural residents of the southeastern coastal states coexisted with the smoke from millions of acres of

southern pine forests that burned almost annually. They recognized that such burning was vital to forest health. And so did the Apache people of the Southwest, who learned long ago how to live with smoke.

No matter how careful land managers are and how favorable the weather, at certain times of year there will always be smoke. Mike Creach, Forest Fuel Specialist with Prescott National Forest, advises that residents, especially those with respiratory problems, need to take personal steps to protect themselves when there's smoke. This includes limiting physical activity outdoors and possibly scheduling a short trip or visit out of town for the duration of the burn. Just as desert residents must learn to cope with the heat in the summer, residents who live in our high country must learn to cope with the smoke that comes every fall when conditions are best for cool, low intensity fires. It is the smell of the forest.

For more information on prescribed burns in our area and how to protect yourself from smoke, please visit the following web sites:

http://www.regionalinfo-alert.org/ Prescott Area Wildland Urban Interface Commission

http://www.fs.fed.us/r3/prescott/_ Prescott National Forest

http://www.azdeq.gov/environ/air/smoke/fires.html_AZ Dept. of Environmental Quality