8. Integrating Fuel Reduction with Other Management Objectives

Forestland owners typically have several management objectives, and increasing fire resistance is only one of them. Actions to reduce risk and increase fire resistance must be integrated with these other priorities. Fortunately, wildfire management is usually compatible with wildlife enhancement, timber production, forest health, aesthetics, recreation, and other common objectives. Some ideas for integrating wildfire management with these objectives are discussed next.

Wildlife enhancement

Management for fire resistance tends to reduce forest density and the amount of understory vegetation. As with any change in forest conditions, this may be detrimental for some species and beneficial for other species. In practical terms, here are some things you can do to provide wildlife habitat while addressing wildfire concerns:

- When treating brush fields and areas with dense ladder fuels, leave patches of brush and other understory vegetation, isolated from other patches, for nesting and hiding cover for birds and small mammals (Figure 31).
- Leave isolated clumps of unthinned trees for cover.
- Increase thinning and fuels reduction intensity in key topographic locations, such as ridgetops and along roadways. Decrease thinning intensity to retain more understory vegetation in more fire-resistant locations, such as riparian areas and north-facing slopes.
- Retain deciduous shrub species, which contribute little to fire hazard.
- Retain some snags, particularly those that are more than about 11 inches in diameter at breast height. Two or three per acre is a common target, but more may be appropriate for some habitat objectives. More than 100 wildlife species use snags for roosting and foraging. The larger the snag, the more valuable it is for habitat, since it can be utilized by a larger number of species. Once ignited, however, snags can be a source of burning embers, which can ignite spot fires. For this reason, it's a good idea to remove snags in fuelbreaks and on ridgelines, while leaving snags in riparian areas, draws, and other less elevated locations. In addition, snags are a major safety hazard to firefighters.
- Retain large, downed logs. Large logs, as previously noted, contribute little to fire spread. However, large logs do contribute to fire intensity if they burn for a long time, impeding mop-up activities. Overall, retention of low to moderate levels of snags and logs (two to three per acre of each) provide habitat without substantially increasing fire risk.

Timber production

In many cases, family forestlands can be managed to increase fire resistance without negatively impacting timber production. Conflicts between these objectives are most likely in situations when thinning for fire resistance would call for wider spacing between trees than would be optimal from a timber production standpoint. These problems can be reduced by carefully designing fuels treatments for tactically important locations such as near roads and along ridgetops. For example, thinning more widely near a road for 200 to 500 feet above and below the road can create an effective shaded fuelbreak. Beyond this distance, stands can be thinned according to other objectives.

Forest health

Forest health is a major concern for most landowners. Not only is this objective very compatible with managing for fire resistance, but fuels reduction treatments may actually improve forest health. Trees in overly dense stands are often stressed and vulnerable to attack by bark beetles and other pathogens, especially on dry sites. Beetle-killed trees increase fuel loading. Thinning these dense stands "from below" reduces competition among trees and leaves the largest, healthiest trees standing, improving individual tree and overall stand vigor, and hence increasing resistance to beetle attack.

Sustaining site productivity

As noted previously, an important principle in creating fire-resistant forests is to reduce surface fuels. Small, decomposing material—leaves, needles, and branches—makes up much of this surface fuel load, but it also contains many important nutrients. Reducing these fuels can potentially reduce nutrient levels and thus, site productivity. The extent of nutrient reduction, however, depends on existing site productivity, the amount of material removed, and how often treatments are repeated. Thinning, pruning, cut-and-scatter, and mechanical fuels treatments typically rearrange fuels but do not remove biomass from the site. As the material decomposes, nutrients return to the soil. Since larger branches and logs contain relatively small percentages of key nutrients such as nitrogen, removal of log-size material will likely have a small effect on site productivity. Some

larger material should be retained, however, for wildlife habitat and to provide organic matter. Piling and burning and prescribed underburning consume some fine material, but nutrient loss is usually too small to measurably affect site productivity. However, repeated, intensive piling and burning of slash or "hot" prescribed underburns could result in substantial nutrient loss on some sites, especially those with relatively little organic matter and low initial nutrient levels.

Aesthetics and recreation

Thinning, pruning, and other fuels reduction methods typically create more open forests, though the visual impacts can range from subtle to dramatic. Some owners prefer a more open, park-like appearance while to others it may seem unnatural. Visual impacts can be mitigated by leaving untreated buffers in some locations, and by varying the spacing between trees and/or brush in fuels reduction treatments. These measures often dovetail well with wildlife habitat considerations, described earlier. By creating more open forests, recreational access may also be improved.

Marty Main, Small Woodland Services.

Figure 31. Leave clumps of brush for wildlife.

9. Adding Fire Management to Your Stewardship Plan

If you have a management plan for your forest property, considering adding a fire planning section to it. If possible, bring your state forestry or fire agency or your local fire protection association (FPA) out for a look at your forest to discuss potential firefighting strategies. This is your chance to show fire protection personnel the locations of your gates, special resources to protect, roads, water sources, and fuelbreaks. Take notes during your meeting. These can serve as the basis for a fire plan for your property.

The fire plan should be included in your overall stewardship plan. Key areas to discuss include the following:

- Creating or improving water sources for firefighting.
- Improving property access for firefighting equipment.
- Structure and home protection (defensible space).
- Firefighting and other equipment available or needed.
- A map identifying locations of homes and outbuildings, power and utility lines, fuel and chemical storage, roads and bridges (including weight limitations), water sources, gates, thinned areas (including slash accumulations by year), fuelbreaks and firebreaks, and other relevant items.

Going through the process of creating a fire plan will help you systematically evaluate your property and identify ways to reduce fire risk. It can also help you communicate with your state forestry or fire agency and your rural fire protection association, as well as neighbors.

Remember, wildfire behavior can escalate rapidly, and quick decision making in the event of a fire can greatly increase the likelihood of control and/or minimize negative effects. Having necessary information in a fire plan easily accessible for firefighting personnel can be very important to reducing risk of damage to homes and other improvements, as well as to important forest resources and values.