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RESOURCE STEWARDSHIP

Factors to Consider When Planning a PRESCRIBED Burn for Wildlife Habitat

By: Ryan Mitchell and Claude Jenkins

When you go to a doctor with a medical problem, she/he will probably evaluate you to diagnose the problem and then prescribe a treatment to correct the problem. And, if you intend to accomplish your goal of getting well, you should follow the treatment as prescribed. If, while following the prescribed treatment, the desired outcome is not achieved, you and your doctor will revise the treatment. The same general approach should be taken when planning a prescribed burn to accomplish a particular habitat objective. If you contact a wildlife biologist for technical assistance, you and the biologist should first discuss your land-use goals. Afterwards, the biologist should evaluate the conditions of your property to determine a suitable fire treatment to accomplish your goals. If, while following the prescribed treatment, the desired outcome is not achieved, then you and the biologist should revise the treatment to accomplish the desired outcome.

The benefits of fire to wildlife habitat are widely known, but fire is often applied in a manner that does not accomplish the desired outcome. And, unfortunately, many fire prescriptions are based on a rule-of-thumb rather than landowner goals, site conditions (slope, hydrology, amount and type of ground cover, etc.), and wildlife habitat requirements. Like your medical doctor, prescriptions should be made after sufficient information is gathered to make an informed and intelligent prescription. Perhaps the most commonly recommended rule-of-thumb is “burn every three years in February or March.” While this may be just what is needed to accomplish a particular habitat objective, we have observed many cases where

landowners were following this general rule only to make no progress toward accomplishing their goals. Yes, the application of fire to create, enhance, or maintain wildlife habitat is good, but it needs to be applied in a manner that considers landowner goals, site conditions, wildlife habitat requirements, etc., to accomplish a desired outcome.

Scale of fire should be considered when planning a prescribed burn for wildlife habitat management. If deer habitat management is the goal, a relatively large area can be burned without negatively affecting the deer population. However, if quail habitat management is the goal, the property should be divided into relatively small burn units to create a pattern of burned and unburned areas across the property. Another option for quail is to burn on a larger scale (larger than individual burn units) but under environmental conditions that allow for a mosaic of burned and unburned patches throughout the burned area. Unlike deer, quail are not highly mobile and require a variety of habitat types in close proximity to meet their habitat requirements, minimize travel, and exposure to predators.

Season of fire should be considered when planning a prescribed burn for wildlife. For example, if hardwood encroachment is replacing the herbaceous vegetation needed for food and cover for wildlife, perhaps a growing season burn (or multiple growing season burns) is needed to reduce the occurrence of hardwood brush and release the desired herbaceous vegetation. Many landowners are concerned that turkey and quail nests will be destroyed using growing season burns. While some nests will be destroyed, turkeys and quail tend to avoid areas for nesting that are dominated with woody brush. The benefits (i.e. improved habitat conditions) of growing season burns far outweigh any nests that may be destroyed! Also, turkeys and quail have a high reproductive potential and will re-nest if a nest is destroyed by fire. Burning areas throughout the year can bring on more food



PHOTO BY CLAUDE JENKINS

Fire was applied in the month of June to reduce the occurrence of low quality hardwood brush and improve habitat conditions for wildlife.

resources for turkeys and quail as food resources are diminished in areas that were burned in late winter. Hydrological conditions may determine when an area can be burned. For example, if an area is wet during winter and spring, then summer may be the only time the area is dry enough to burn. Don't get locked-in to thinking that the only time you should/can burn is in late winter! This erroneous notion limits your flexibility to use fire in a prescribed manner to accomplish a wildlife habitat objective.

Like scale and season of fire, the frequency at which fire is applied is a very important consideration for maintaining suitable wildlife habitat. Fire frequency is probably recommended as a rule-of-thumb more than any other factor. And, like season of fire, many habitat managers will lock-in to a particular frequency and never adapt with changes in environmental and site conditions. A two-year return interval is a good general rule for quail, for example, but we have evaluated very productive sites that require annual burns and very poor quality sites that do not require a burn but every three to five years. A three-year return interval is a good general rule for deer; however, many sites managed for deer require a more frequent burn to maintain suitable habitat conditions.

The use of a particular ignition technique will allow a habitat manager to accomplish the desired fire effect. A backfire, for example, slowly burns into the wind and is a relatively low intensity fire. They are commonly used to create a mosaic of burned and unburned areas throughout a managed area; however, under certain environmental conditions, backfires can be relatively high in intensity and used to create "cleaner" conditions. A headfire will burn with the wind and usually with greater intensity, longer flame length, and faster rate of spread than backfires. Headfires are effective at killing unwanted woody vegetation to enhance wildlife habitat quality. The strip headfire technique includes multiple headfires that are ignited in succession and into the wind to achieve a faster rate of spread than backfires and a lower intensity than headfires. The strip headfire technique can be used in young longleaf pine stands

to maintain a relatively low intensity fire and move the fire quickly past the young longleaf seedlings/trees. The newly ignited strip will increase in intensity until it meets the previously ignited strip, at which time the fire will go out. Ringfires, as the name implies, is a technique used when an entire area is circled with fire, and as the ring of fire encroaches upon itself it creates extremely intense conditions. Ringfires can be used in treeless, grassland habitats to reduce the invasion of woody species and enhance grassland habitat for wildlife. The spotfire technique can be used to treat a large amount of habitat in a relatively short amount of time. Numerous spots are ignited which burn in all directions as they come together, this minimizes the likelihood that any one spot will gain enough momentum to create a high intensity fire.

There is no cookie-cutter approach to planning a **prescribed** burn for wildlife habitat. The planning process requires a thorough knowledge of the habitat requirements of the wildlife species to be managed. It requires an understanding of site conditions relative to wildlife habitat requirements so the best fire prescription can be determined for creating and maintaining desired habitat to accomplish landowner goals. And, the person implementing the plan should be willing and prepared to adapt as environmental or site conditions change so that fire is applied in a manner to get a return (i.e. improved habitat) on the fire investment.

Prescribed burns should be conducted only by a certified prescribed burn manager who has a written burn plan and has obtained a burn permit from the Alabama Forestry Commission (AFC). Landowners and others interested in becoming a certified prescribed burn manager can go to AFC's website at <http://www.forestry.alabama.gov/> for information on the Certified Prescribed Burn Manager classes. Landowners interested in financial assistance opportunities for prescribed burning should contact their local Natural Resources Conservation Service office.

The spotfire ignition technique was used here to reduce the accumulation of forest litter and improve habitat conditions for wildlife.

