USDA United States Department of Agriculture
Natural Resources Conservation Service

October 2017

Prescribed Burning – Bobwhite Quail and Grassland Obligates

Georgia Practice Job Sheet-338

(Modified by GADNR Wildlife Biologists- Bobwhite Quail Initiative)

Prepared for: _____

Prepared by: _____

Farm: _____ Tract Number: _____ Date: _____

Caution: Prescribed burning should be conducted only by those who are trained and experienced in its use. The landowner is responsible for obtaining all permits and clearances as required by law. Photo Credit: USDA NRCS State Forester Michael Sampson

DEFINITION

Applying prescribed fire to a predetermined area as a wildlife habitat management tool. In addition to reducing wildfire hazards, frequent prescribed fire provides necessary structure and composition needed for supporting bobwhites and other grassland obligate species. Prescribed fire is an essential tool used to provide the necessary distribution of grasses, forbs and legumes, and woody cover such that each component makes up one third of the ground cover composition.

PURPOSE

- Remove undesirable vegetation
- Promote fire-dependent species
- Promote early succession habitat
- Wildlife habitat improvement
- Restore and maintain native communities
- Reduce wildfire hazard

Remove Undesirable Vegetation

In absence of frequent two-year fire, low value, poor quality hardwoods and shrubs invade southern pine forests over time. Frequent prescribed fire reduces undesirable vegetation to a manageable level needed to sustain one third shrub cover component within the understory composition.

Reduce Wildfire Hazard

Fuels such as pine needles, undergrowth, fallen branches, and other forest litter can build to levels that create a high risk of destructive wildfires in areas of poor quality quail habitat. A two-year frequency of prescribed burning schedule eliminates the risk by reducing fuel buildup to manageable levels.

Wildlife Habitat Improvement

In today's fragmented landscapes, it is important to reduce individual burn unit size to 50 acres or less. Reducing burn unit size produces fresh low browse and readily available foraging and escape cover within an animal's home range throughout the entire year in conjunction with frequent fire. The patchwork mosaic pattern of prescribed fire ensures a spatial distribution of cover that meets habitat requirements of many different game, non-game, and pollinator species.

Promoting Fire Dependent Species

Many species of wildlife, pollinator insects, and plants are dependent on frequent fire. In addition to bobwhites (also known as the "fire-bird"), species such as gopher tortoise, indigo snake, red-cockaded woodpecker, wire grass, milkweed, monarch butterfly, and pitcher plants depend on frequent fire. In an area where ample sunlight reaches the forest floor, prescribed fire on a two-year frequency may increase fire dependent species abundance and richness.

Restoring Native Plant Communities

Prescribed fires for quail and other wildlife should recognize the fire tolerance of desirable and undesirable plants. Timing of the burn should be correlated with stages of plant growth and nesting season. Frequency of burning should be adequate to accomplish the desired plant responses and timing should target March 1- May 15.

LANDOWNERS PREPARATION MEASURES

A. Notify the Georgia Forestry Commission for an outlook of weather conditions, and to get a burning permit. Also contact adjacent landowners.
B. Have all necessary firebreaks prepared before the fire is started.
C. Have on hand the help, tools, and equipment needed to keep the fire under control.
D. Inspect fuel (burnable vegetation) conditions thoroughly.
E. Have a prescribed burning developed by an experienced, and preferably certified, prescribed burn manager.
F. Landowners are encouraged to complete Georgia Forestry Commissions Prescribed Burn Manager Certification.

Stand Conditions

In longleaf pine, an initial burn should be done within the first two-three years of planting followed by a two-year fire return interval for the life of the stand. As pines mature, attention should be focused on canopy closure and the amount of sunlight reaching the ground. As canopies close and sunlight reaching the ground becomes limited, value added through prescribed fire is reduced. To achieve maximum benefit from prescribed fire practices, stands should be managed and maintained to provide adequate sunlight. For more information on stand management for quail, see Job Sheet on Forest Stand Improvement for Bobwhite Quail (666).

Fuel Conditions

The kind, amount and arrangement of the fuel, along with the desired intensity of the fire and the objectives of the burn will determine the type of fire to use and what weather conditions are favorable. Heavy ground litter (needles) and dense undergrowth require exact weather conditions so that flames or excess heat are not carried into the tree crowns. In such cases, two or more burns should be planned to reduce fuel. The initial burn is made when the humidity is around 50 percent and the ground litter moisture is at a relatively high level (20+ percent).

Weather Conditions

Wind - A moderate, steady wind (2 to 7 mph) from a direction that allows for sound smoke management. This ensures that care will be taken in avoiding smoke conflicts with highways, towns, or busy areas.

For best results relative humidity- 30- 50%. Rainfall- From ½ to 1 inch of rain is usually needed 1 to 2 days before a prescribed burn. For most burns, the upper litter layer should be dry to the touch (10 to 20 percent fuel moisture). The thin organic layer on the top of the mineral soil should be moist, and the soil beneath should be damp.

Habitat Management

For management of native grasses, weeds, and woody vegetation, burns should be completed in March – May 15. Burning during this time limits nest loss from fire while effectively executing prescribed fire as a management tool on the landscape. Burn on a two-year fire frequency across a patchwork mosaic of burn units to ensure the same burn unit is not burned more than once every two years. Alternating adjacent units burned every year with unburned cover, foraging, and nesting components, allows for less travel and foraging in poor habitat conditions.

Time of Day

Daytime burning offers the advantages of better weather and working conditions. Prescribed burning should start in the mid-morning when the weather for the day can be determined and the firing stopped so areas will burn out by dark. Due to the normal die-down of wind at night, and the rise in humidity, smoke can remain close to the ground and collect in low places, causing potential visibility and other smoke related problems.

Maintenance

Approximately one-half of the managed area should be burned annually.

PRESCRIBED BURNING TECHNIQUES

Backing Fire

A backing fire is started along the edge of a road, firebreak, stream or other barrier, and allowed to back into the wind. This technique is the easiest and safest to use, provided wind speed and direction are steady. It produces minimum scorch and lends itself to use in heavy fuels and young pine stands. Be mindful this technique holds higher heat longer at the base of trees than other firing techniques.

Strip-heading Fire

A series of lines of fire are set progressively upwind of a firebreak in such a manner that no individual line of fire can develop to a high energy level before it reaches either a firebreak or another line of fire. Strips are often set 66 to 200 feet apart, varied to adjust for topography, stand density, weather or the type, amount or distribution of fuel.

Flanking Fire

This technique involves setting fire lines directly into the wind (the line running at right angles with the wind direction). The fire then spreads at right angles to the wind. It is useful on a small area or to facilitate burning a large area in a relatively short time when a strip-heading fire would be too intense.

SMOKE MANAGEMENT

Prescribed burning, with all its many desired objectives, nevertheless can create issues and even conflict with smoke dispersion. Therefore, it is imperative that guidelines be followed to avoid smoke-related problems. First, determine if any smoke sensitive areas are nearby. Such things as airports, highways, communities, recreation areas, schools, hospitals, factories, etc, should be considered. Use the following guidelines to reduce the impact from smoke.

A. Obtain and use weather and smoke management forecasts
B. Do not burn during pollution alerts or stagnant conditions
C. Comply with air pollution control regulations
D. Burn when conditions are good for rapid dispersion
E. Use caution when near or upwind of smoke sensitive areas
F. Use caution when smoke-sensitive areas are down drainage

BURN PLAN

A prescribed burn plan is required before the practice is implemented. The specifications for the burn plan should cover and accommodate the burning for each specific site. The prescribed burn plan should be prepared by someone certified in the use of prescribed fire. Have a written prescribed fire plan for each forest, forage, wildlife, and agricultural area to be burned. Moreover, have on site the prescribed fire plan during the burn and adhere to the plan.

REFERNCES

USDA-NRCS National Conservation Practice Standard Code 338 – Prescribed Burning, September 2010.

Introduction to Prescribed Fire in Southern Ecosystem, U.S. Department of Agriculture Forest Service, August 2012 slightly revised 2015.

Georgia's Best Management Practices for Forestry, Georgia Forestry Commission, May 2009.

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Certification Job Sheet:

Prepared by: _____

Title: _____ Date: _____

Approved by: _____

Title: _____

Installation:

Did landowner provide NRCS a burn plan _____ (Yes or No)?

Did prescribe burning meet landowner's objectives for implementation _____ (Yes or No)?

How many acres were treated using prescribed burning practice _____?

What use was prescribed burn utilized for _____?

Select the type of prescribed burning technique applied to implement prescribed fire _____.

This practice was completed and meets NRCS standards and specifications.

Certification by: _____

Date: _____