Improving Forest Habitat With Prescribed Burns

The Pennsylvania Game Commission is using prescribed burns to improve forest habitat on State Game Lands throughout the Southeast Region. The first part of this brochure includes information about how and why prescribed burns are used and what to expect before, during and after a prescribed burn. The second part of this brochure contains information about the specific details for this burn.

THE PROBLEM...

The majority of State Game Lands are forested, with oak species being a major component. As an oak forest begins to age, the new oak seedlings are outcompeted by other tree species (such as birch, maple and tulip poplar). The overall impact to the forest is a decline in the number of oak seedlings growing into mature trees and a change in the species composition of the forest.

This decline in the number of oak seedlings is a problem because oak trees are extremely valuable to wildlife. Oak acorns have high nutritional value and are sought after as a fall food by a variety of birds and mammals as they prepare for the winter. While other trees may hold some value to wildlife, they don't compare to the benefits derived from oak.

Oak trees are very different from birch, maple and tulip poplar. Their bark is much thicker and their root systems are much deeper. Because of these fundamental differences, fire can be used to promote the growth of oak seedlings and reduce competition from other species. A very monitored, slow moving "prescribed burn" can be used to remove the black birch, red maple and tulip poplar seedlings from the forest understory. The fire will enable the oak seedlings, already present on the site, to sprout and grow without interference from surrounding vegetation. This will allow oak to remain the dominant species as this forest grows.

HOW DID WE GET HERE...

Throughout Pennsylvania's long history, oak trees have evolved with low intensity fires, a lot of them occurring naturally. Fires were intentionally set by native Americans for thousands of years to promote wild berries and improve game habitat. In the early part of the 20th century, public concern over wild fires led to the creation of the US Forest Service's *Smokey Bear* campaign in 1944. Since then, wildfires have been all but eliminated from the state. This has not had a completely positive result. Because of the reduction of fires, Pennsylvania forests have changed and resulted in the gradual transition away from a forest that was once dominated by oak trees to a forest now dominated by red maple and black birch. In order to increase the number of oak trees on each site, the Game Commission attempts to mimic those earlier growing conditions by reintroducing fire, in a controlled manner, back into the forest ecosystem.

Northcentral Region
2016—Fall

SGL 100, Centre Co.
Unit 8

The Game Commission has been using prescribed burns as a habitat management tool for more than ten years, burning thousands of acres, from grasslands to forests.

Prescribed burns may be scheduled to occur much of the year depending on the weather and site conditions. All prescribed burns will be conducted and guided by all laws, standards and procedures of the *Prescribed Burn Practices Act,* as well as techniques learned from prescribed burns on other State Game Lands.

WHAT TO EXPECT...

The use of prescribed burns, sometimes referred to as a controlled burn, is very different from a "wildfire." With a prescribed burn, safety is the first consideration in the process, from the planning through the implementation. The entire operation is overseen by a "Burn Boss." The process for a prescribed burn begins with a detailed plan written by local field staff, approved by the Pennsylvania Game Commission and reviewed by other state agencies. Only after this has been accomplished, can the agency move forward with the prescribed burn.

Crews review final safety and management plans with the Burn Boss prior to the beginning of the prescribed burn.

The timing of a burn is very weather dependent and takes into account the amount of moisture both in the ground and in the growing vegetation. The public will be able to find information on the exact burn window for all prescribed burns in the Southeast Region on the Game Commission website.

In anticipation of the burn, a fire break is established around the entire area. Prior to the burn, all of the leaves and branches are removed from the fire break so that it will serve as a barrier between the prescribed burn and the surrounding forest.

During the day of the prescribed burn, access to the site will be restricted and only people directly associated with the burn will be allowed access at or near the site. Trained staff will be on hand with numerous pieces of fire equipment and water resources. All necessary local fire and emergency personnel will be notified in advance.

Prior to the start of the prescribed burn, a small, easily extinguished "test" burn will be conducted so that the Burn Boss can check the fire behavior and smoke dispersion patterns for the day. If the "test" fire burns within the pre-determined parameters, the prescribed burn will be allowed to continue. If it does not burn within those parameters, it will be called off for the day.

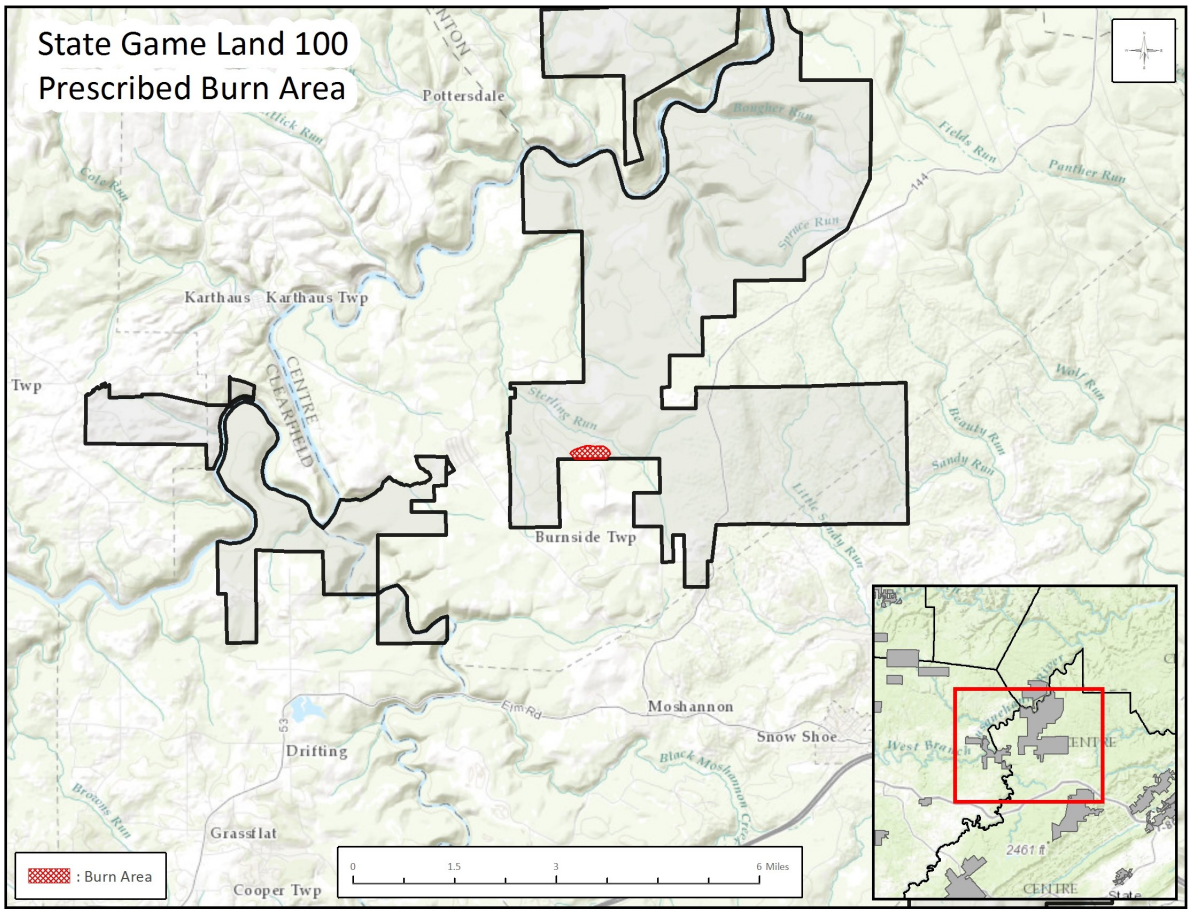
Prior to the start of the prescribed burn, a small test fire is conducted so that the Burn Boss can check fire behavior. If the test fire does not burn within predetermined parameters, it will be called off for the day.

If the Burn Boss approves the prescribed burn to proceed, an experienced crew of Game Commission and other natural resource agency personnel will use a regimented process to burn the site.

As the fire begins to burn out, remaining areas with flames will be extinguished. After the prescribed burn is finished, there may still be small amounts of smoke present within the interior of the controlled burn area as some of the vegetative material burn out. This smoldering may last for several days after the area is burned. Flames will not be present though and there will be no danger to surrounding forest. The area will be monitored over the next 24 hours.

SPECIFIC MANAGEMENT DETAILS…

Location: State Game Land 100— Centre County - Burnside Township



Burn Window:

A safe and effective prescribed burn is very dependent on both site and weather conditions. An anticipated burn window is established between time periods when optimum site and weather conditions could be present. As more exact weather and site conditions become known, the window for the burn is narrowed. At this point, the anticipated burn window is between October 23, 2016 and November 18, 2016. The public will be notified of the burn window status through the Game Commission website.

Burn Objectives:

State Game Lands 100, totaling over 20,000 acres, is located in northern Centre County. It contains a wide variety of habitat types and is home to diverse plant and animal communities. The game lands is almost entirely forested except for scattered herbaceous openings, water features, and road and utility infrastructure. Of the forested areas, the most abundant type of habitat is the dry oak heath forest. On this game lands this type of forest includes many plant species that are beneficial to wildlife for food and cover, including chestnut oak, red oak, white oak, scrub oak, black gum, pitch pine, sassafras, service berry, mountain laurel, black huckleberry, and blueberry.

Oak habitats in this region have evolved with frequent fire disturbance. Evidence suggests fires occurred approximately every 15 years prior to the era of modern fire suppression in the early 1900's. Without fire, species less adapted to fire have thrived, including red maple, striped maple, and black birch. These species are less beneficial to wildlife and often crowd out more beneficial species in the absence of fire.

The area to be treated with a prescribed burn covers 59 acres, located in Burnside Township, Centre County. This stand was part of a timber harvest salvage project which took place in 2013 in response to the high levels of oak mortality, which

resulted from the most recent gypsy moth infestation. In this stand, oak seedlings are present but are being outcompeted by red maple and black birch.

The primary goal of this burn is to help free the suppressed oak seedlings from the shade of less fire- tolerant species. If current conditions continue, most of the oak seedlings will eventually be shaded out and die. A prescribed burn will knock back a large number of the competing seedlings, allowing existing oak seedlings to grow freely and new oak seedlings to get established. Additional goals include fuel reduction and to increase soft mast, including blueberry, huckleberry, and blackberry.

An 8-foot wide fire break is established around the entire parameter prior to the prescribed burn to serve as a barrier between the prescribed burn and the surrounding forest.

AFTER THE BURN…

Although the area may look a little different for a short time, the long and short-term effects will definitely benefit wildlife, the forest habitat and the users of State Game Lands. The blackened soil of the burn will remain in that condition for a short time, but will come alive with plants germinating from seeds exposed by the fire. Oak seedlings will begin to sprout very soon after a prescribed burn. Seeds produced from the overstory trees will germinate. Recent studies after State Game Lands fires also show reduction in ticks within the burned area. A prescribed burn of this intensity will not impact most of the over story trees. Most of the changes to the forest habitat will take place on the forest floor. Some species (red maple, black birch and tulip poplar) will be reduced from the site for a number of years. Within the following growing season, the site should be green and teeming with new plants – many of them rare plants that depend on fire to germinate and grow!

ADDITIONAL QUESTIONS…

While this brochure may have answered many of your questions, it may not have addressed them all. For more information about a prescribed burn, please go to the Game Commission's website at: www.pgc.pa.gov and click on the Prescribed Fire icon.

If you have any comments, ideas, questions or concerns regarding this project, please contact Doty McDowell, Northcentral Information and Education Supervisor, at the following address: Pennsylvania Game Commission, Northcentral Region, 1566 S. Route 44 Hwy., Jersey Shore, PA 17740 or call 570-398-4744, ext. 308. A copy of the burn plan containing detailed information about a particular prescribed burn can be obtained by sending a written request to Doty McDowell.

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Northcentral Regional Office

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