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.

Southeast Region
2016 - Fall

SGL 210, Dauphin Co.
Greenland East Burn, Unit 2

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.

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.

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

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.

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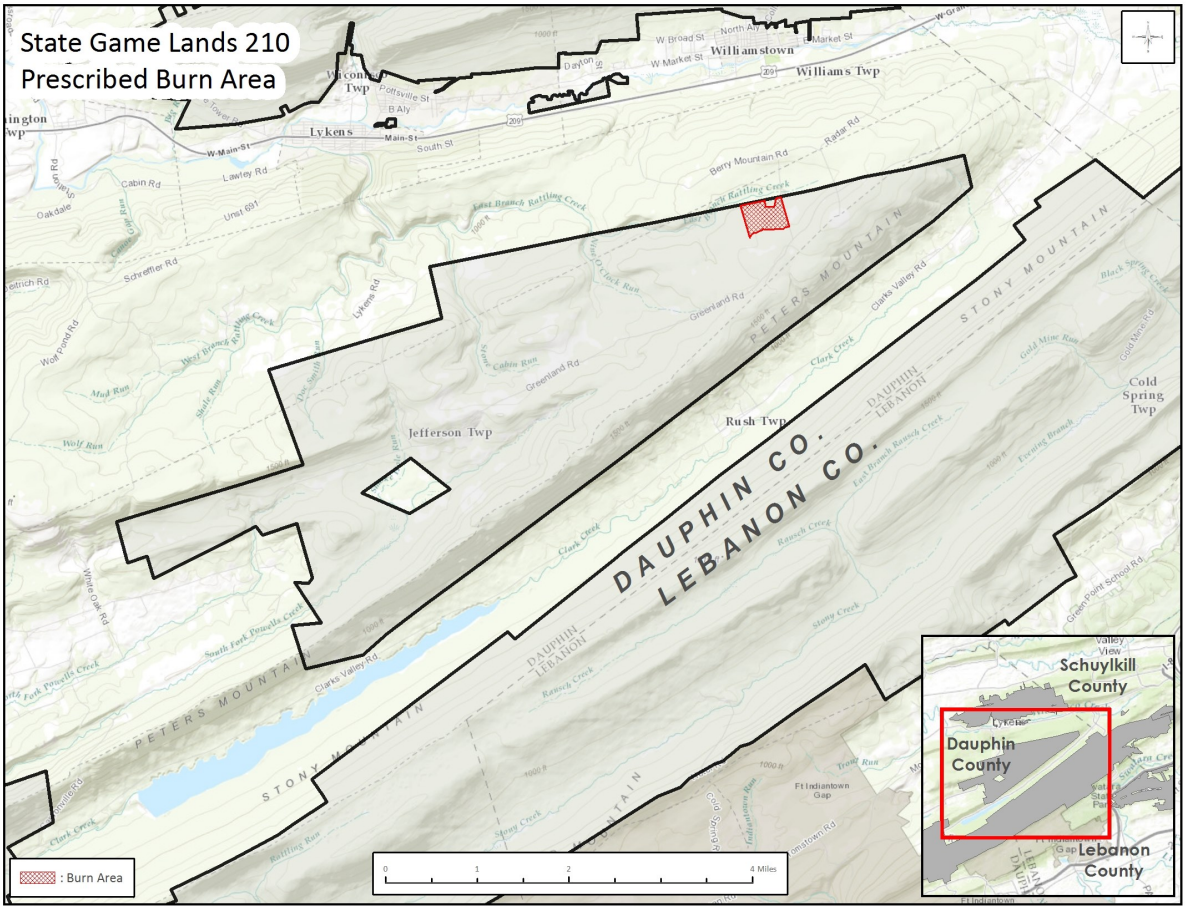
SPECIFIC MANAGEMENT DETAILS…

Location: State Game Land 210 — Dauphin County - Jefferson 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 24, 2016 and November 18, 2016. The public will be notified of the burn window status through the Game Commission website.

Burn Objectives:

State Game Land 210, totaling 11,237 acres, is located in Dauphin County. It contains a wide variety of habitat types within its borders and is home to a multitude of different wildlife species. Since over 95% of this State Game Lands is forested and the species mixture is predominately oak, the use of a prescribed burn is very appropriate.

The area to be treated with a prescribed burn totals 88 acres. In this area, there is a problem with regenerating scrub oak as well as other oak species such as scarlet, white and chestnut oak. Scrub oak provides a valuable and dependable source of acorns, as well as cover and nesting areas to many birds and mammals. Mountain laurel, red maple, blueberry and huckleberry shrubs have all created a thick layer of shade, limiting the amount of sunlight that hits the forest floor, inhibiting the oak acorns' ability to sprout and regenerate. Also, a thick layer of accumulated leaves has created an additional barrier on the forest floor, making it even more difficult for the acorn roots to become established in the soil. A prescribed fire would reduce the number of competing shrubs and remove the leaf litter.

There is also a need to regenerate the pitch pine that is present on the site. Pitch pine requires fire to regenerate. Fire causes the cones to open and the seed to disperse across the burned area. Pitch pine provides both food and thermal cover

to wildlife, particularly during the harsh winter months. Due to their dense crown, they are a preferred species of the saw-whet owl during their migration.

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 Prescribed Fire.

If you have any comments, ideas, questions or concerns regarding this project, please contact Randall Bauman, Southeast Region Forester, at the following address: Pennsylvania Game Commission, Southeast Region, 253 Snyder Road, Reading, PA 19605 or call 610-926-3136, ext. 6686. A copy of the burn plan containing detailed information about a particular prescribed burn can be obtained by sending a written request to Randall Bauman.

After the burn, the blackened soil will remain in that condition for a short time but will come alive with plants germinating from seeds exposed by the fire.

For more information:

Southeast Region Office
253 Snyder Road, Reading, PA 19605
610-926-3136

www.pgc.pa.gov

ct 10/2016

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