

Managed Fires

Shenandoah National Park
National Park Service
U.S. Department of the Interior



Safer, Healthier Forests

Weather permitting, Shenandoah National Park is planning several prescribed burns during the spring of 1999. The Pumpkin Hill prescribed burn will encompass 108.8 acres at park headquarters near Luray. The Sawmill Run burn will be in the southwestern section of the park and totals 56.3 acres. The Shop Run prescribed burn will be in the southeastern section of the park and will be 700-1000 acres in size.

Prescribed burns are fires that are intentionally set under pre-determined environmental conditions. They allow a fire to be confined within the limits of a pre-determined area and produce a desired effect on the vegetation. Appropriate adjacent local, state, and federal agencies are involved in coordination of all phases of the operation prior to the implementation of a prescribed burn.

Prescribed burning is used to meet a wide variety of management objectives. Chief among these are the reduction of unnatural forest fuel accumulations that have resulted from the cumulative effects of insect, storm and ice damage, and the perpetuation of species that require the presence of fire for their survival. The Pumpkin Hill and Sawmill Run prescribed burns are examples of the former objective. The Shop Run burn will help restore a fire-dependent species, the table mountain pine.

Because a prescribed burn must meet strict environmental conditions before a fire is ignited, it is not possible to pre-determine the exact day or week that a burn will take place. If the set of conditions, the burn prescription, are not in place, the burn is not implemented. When the burn prescription is attained, the burn is initiated and constantly monitored by a cadre of trained, certified, and experienced personnel. Typically, prescribed burns are completed in 2-3 days time.

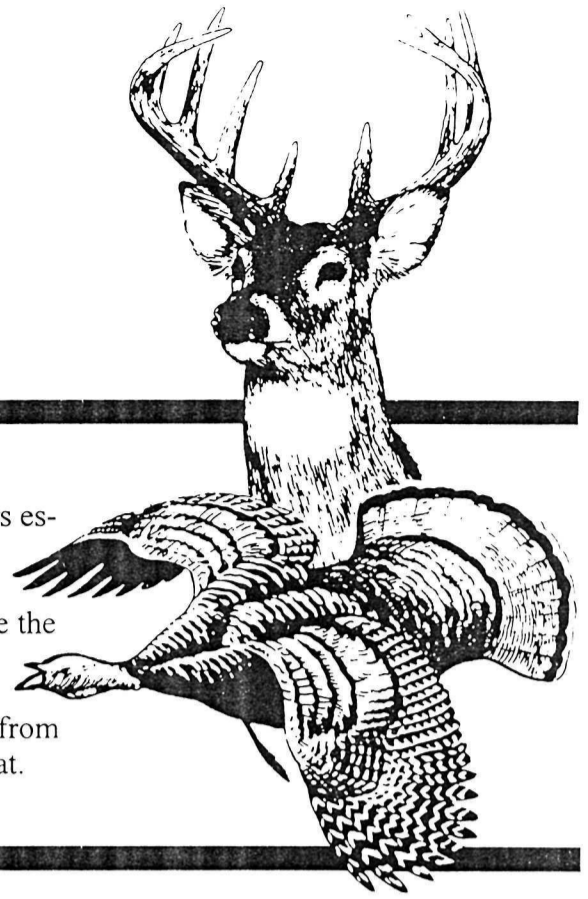
WHAT ABOUT THE SAFETY OF NEIGHBORS?

One of the most effective uses of prescribed fire is to reduce the potential hazards associated with catastrophic wildfire by decreasing the hazardous fuel accumulations along park lands that are adjacent to developed areas. During the implementation of the burn, conditions are constantly monitored. If any of the perimeters go "out of prescription", that is, fail to stay within acceptable limits, the prescribed burn is immediately suppressed. A contingency plan is a viable part of the preparation for every prescribed burn.

WHAT ABOUT SMOKE AND AIR QUALITY?

Smoke cannot be avoided, but it can be managed. The amount and duration of the smoke produced by a prescribed burn depends largely upon the type, quantity, and moisture levels of the vegetation being consumed. The greatest volume of smoke is produced during the ignition phase. Brush and leaf litter fuels tend to burn hot and fast, with the smoke produced dissipating rapidly. Heavier fuels, like dead and down logs, will continue to produce smoke during the entire fire. Wind direction, the heights to which smoke will rise, and the strength of the wind are all factors that are included in the prescription for the specific burn. They have a great influence on whether or not a burn is implemented.

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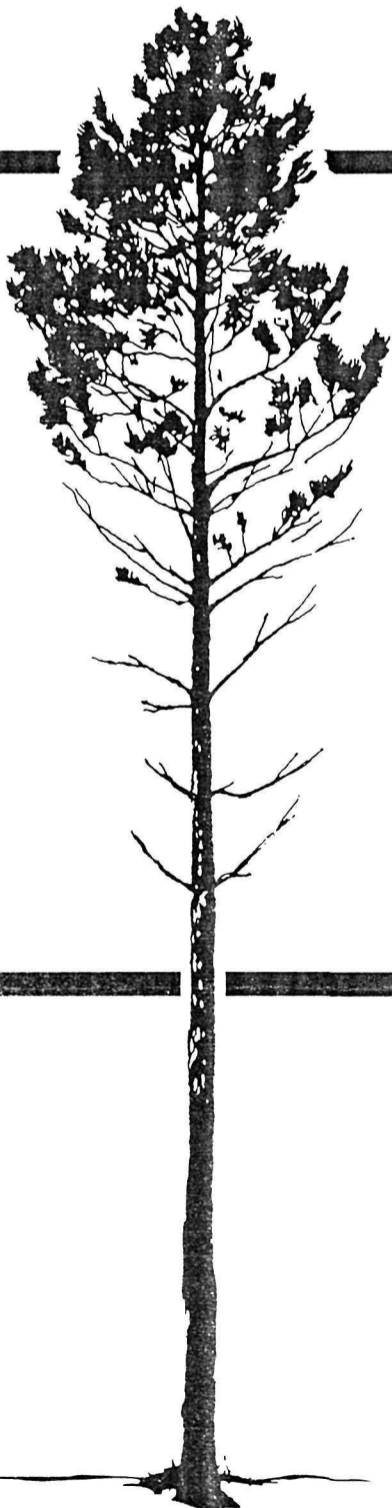


HOW DO FIRES AFFECT WILDLIFE?

During a fire, most wild animals escape. They have a strong sense of smell and usually detect the smoke in plenty of time to leave the area. Many burrowing animals retreat well below the surface of the soil, where they are safe from the effects of the smoke and heat.

WHAT DOES AN AREA LOOK LIKE AFTER A BURN?

Initially, the understory, the lower portions of the forest, will be bare and blackened. Some tree trunks will be scorched, but the upper regions of most of the trees will be visually unaffected. Smaller trees and brush will be consumed for the most part, though fire resistant species will show remarkable resilience to the effects of fire. As spring progresses, new growth will be abundant, resulting from the nutrient re-cycling actions of the fire.



WHY NOT CLEAR MANUALLY OR MECHANICALLY?

Fire is a natural part of the environment. Research has shown that fire benefits many plant and animal communities and that forest health is improved in those areas where fire is allowed to achieve its natural role. Fire reduces the potential for soil-borne diseases like root rot and removes excess plant litter on the forest floor. Nutrients are recycled back into the soil where they benefit growing seeds. Because fire burns in a patchy fashion, post-fire landscapes consist of unburned areas with a wide variety of age classes of trees and plants. This mosaic provides diverse habitats for a large variety of plants and animals and provides natural barriers to the rapid spread of future wildfires. Mechanical reduction can be an invaluable tool, but it has a number of inherent disadvantages. Chief among these is the fact that mechanical reduction techniques often result in the compacting of soil which can speed erosion. Unlike fire, manual and mechanical reduction does not recycle nutrients back into the soil. It is much more expensive and labor intensive than prescribed fire; it is not a natural process and leaves an altered landscape.

WHAT ABOUT THE COST?

Prescribed fires are much more cost effective than wildfire suppression because they are implemented when conditions are favorable for achieving management objectives. Prescribed fire projects are funded by FIREPRO, a National Park Service funding source.