



THE LONGLEAF LEGACY PROJECT WITHIN SAM HOUSTON JONES STATE PARK

Heritage. Restoration. Rebirth.



LESSON 8

Rebirth: Prescribed Fire for Healthier Forests

Fire plays an important role in longleaf pine forests. Longleaf pines live for hundreds of years largely due to their resistance to wildfire. In fact, longleaf pines are fire dependent, which means that planned and controlled burns are necessary to restore and manage longleaf pine ecosystems.

Objectives:

- To understand the importance of prescribed burning in the longleaf pine forest
- To understand what happens to animals during prescribed burning

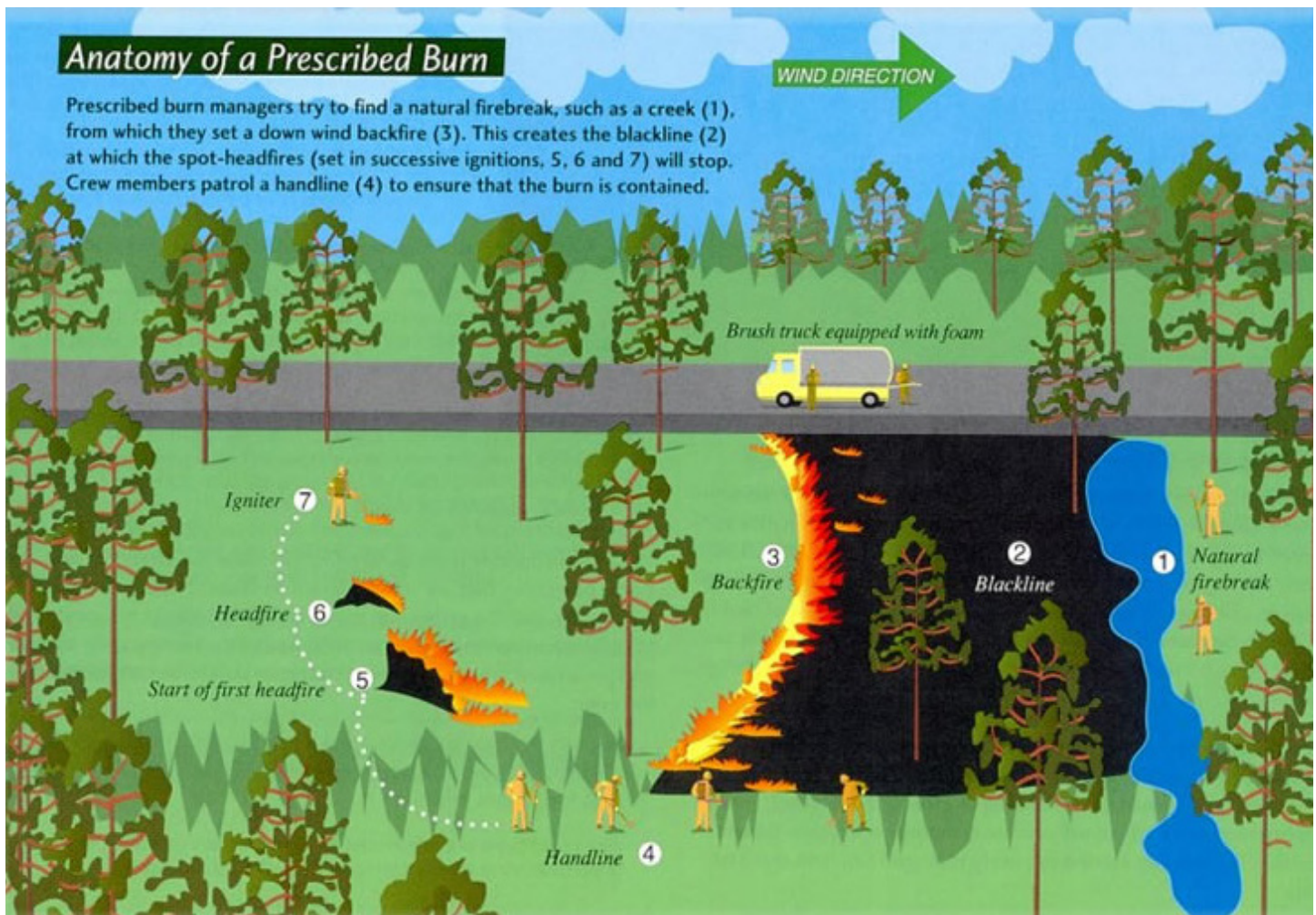
Fire is a Necessity: As experts at [The Longleaf Alliance](#) remind us, frequent, low intensity, and often large-scale surface fires were the dominant factor in shaping the longleaf pine ecosystem across the historical range. Frequent fires, occurring over generations, shaped the longleaf pine ecosystem. Absence of fire has a negative effect on the native plants and promotes the growth of other trees that do not belong in a longleaf pine forest. This is why fire is still the most valuable tool used in restoring and managing longleaf pine ecosystems.

A Long-time Practice: The practice of prescribed burning has existed for centuries. Before humans started to plan fires in the forest, nature helped to maintain longleaf pines. Lightning strikes created forest fires that helped to keep longleaf pines healthy. Humans began to impact longleaf pine forests when they began to move into areas with longleaf pines. Some of the first people to interact with these forests were Native Americans who would burn sections of the forest to remove thick shrubs and plants and to clear paths for cattle. The forest thrived under this practice. Wildlife biologists recognized the value of fire as a tool to conserve wildlife habitats as early as the 1920s.

Fire and Restoration: In longleaf pine forests, fire is necessary to keep up a healthy forest. Prescribed burning is when experts plan a controlled fire to clear the forest of unwanted underbrush. Longleafs are resistant to fire, meaning they do not burn during this process. In fact, fire is a longleaf pine forest's favorite vitamin. It helps control insect and disease problems and brings nutrients back to the soil, encouraging the growth of native plants. This creates a nutrients cycle for a healthy ecosystem.

Longleaf pine forests rely on an open canopy. An open canopy in a forest means that trees have lots of room to grow and that tree tops do not overlap. Prescribed burns help to control the growth of young trees, keeping the forest canopy wide and open. In an open canopy, the sun has room to peek through and shine. Sunlight helps native plants, which many animals rely on for food, to grow.

The more woody shrubs and vegetation in a forest, the greater the risk of fire. Prescribed fire also helps get rid of this woody debris and lowers the risk of wildfire.



Credit: Florida Department of Agriculture and Consumer Services

Animals Hide During a Fire: When administered properly, fire is one of the most beneficial and cost-effective wildlife habitat management tools available. Fire reduces leaves and needles (litter) on the forest floor and exposes soil so wildlife can easily find seeds. Prescribed burns are unlike the dramatic fires we see in forests in the western United States. Rather, burns in longleaf pine forests are small fires that creep along the forest floor, burning only the dried grasses, fallen pine needles, pine cones, etc.

Most wildlife in the longleaf pine forest have developed ways to cope with the frequent fires and escape the flames. Because fire burns away much of the leaf litter on the forest floor and exposes insects and seeds, many wildlife species move into recently burned areas to feed on these newly available foods. In fact, many of the South's increasingly rare reptiles and amphibians, like the gopher tortoise, pine snake and Pine Barrens tree frog, prefer forests frequently burned by fire.

Young hardwoods that sprout back after a fire have more available protein and phosphorus and are tastier to white-tailed deer and other animals than their unburned counterparts. Low ground cover and patches of shrubs are typical of frequently burned areas. This varied pattern of vegetation provides protective cover and abundant insects for some songbirds and young turkeys and quail.

Key Words & Concepts:

Adaptation: A change or the process of change by which an organism or species becomes better suited to its environment.

Nutrients: Substances that provide the nourishment necessary for growth and maintaining a healthy life.

Planned or prescribed fire: Fire that is carefully planned and carried out by trained professionals under specific weather conditions for a specific goal. Also called a controlled burn because experts can somewhat predict what the fire will do.

Prairie: A large open area of grassland.

Shelter: A place that gives protection from bad weather or danger.

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SUGGESTED ACTIVITIES:

- Lead a discussion with students about the differences between the forest fires they may see in the news from the western U.S. and the prescribed burning that occurs in longleaf pine forests. For reference, look back to Lesson 8 for information about prescribed burning. Further information on the topic can be found at the following sources:

[United States Department of Agriculture](#)

[U.S. Forest Service](#)

[The Longleaf Alliance](#)

[Southern Fire Exchange](#)

- Connect the concepts of “stop, drop and roll” with what animals do in a fire. Have students create a list of steps that animals could take to avoid a fire. Identify behaviors and body structures that help animals survive in a particular habitat.
 - For additional resources, review this [lesson plan](#) on how animals behave during a fire, provided by our friends at the [Longleaf Alliance](#).