



BLUE PAPER

Prescribed Burns

Spring 2025
Blue Paper No.14

Maintaining a functioning ecosystem requires a combination of stewardship techniques. History has shown that fire plays an important part in maintaining our local community of plants and animals by promoting native plant diversity and reducing problems posed by invasive species. Our upcoming prescribed burn is a practical and ecologically sound way to accomplish our mission of maintaining our preserves.

History: Before the 1900s, fire was commonly used to care for the land in the Midwestern and eastern oak woods, savannas, and prairies. The practice of burning portions of land was and is a practical tool to clear the understory of forests that had become dense with dead or decaying plant materials. A controlled fire creates open spaces for new plant life to emerge. Tornadoes and heavy storms along with natural or set fires have created a pattern of disturbance that many ecosystems now rely on to maintain a healthy balance.



Biodiversity: Biodiversity measures the number of different plants, animals, insects, and fungi within an ecosystem. Each of these species plays a different role within an ecosystem and a wide variety of species ensures a healthy and thriving balance. A biodiverse ecosystem is more stable and more resilient to climate stressors. A prescribed burn benefits biodiversity by increasing the number of species within an environment. Burning understory plant litter and removing species that may have recently overtaken a landscape releases nutrients into the soil and creates a fresh area for new vegetation to grow. A variety



of seeds lie dormant within soils and can be activated by the heat and smoke from the fire. When these new plants begin to grow and establish themselves, new food sources and habitat areas become available to support more wildlife.

Pollinator Benefits: Along with general biodiversity, frequent fires generally improve habitat for bees and butterflies. The wildflowers, grasses, sedges, and rushes that emerge after a prescribed burn provide nectar and habit for these pollinators. With pollinator habits declining around the world, we must protect them in our local ecosystem.

How the Burn Works: A team of trained prescribed fire specialists create a comprehensive plan for the prescribed burn that includes restoration goals, property history and layout, weather conditions, and applicable fire techniques. To adjust to changing weather patterns, local weather forecasts are used to carefully select the appropriate day for the burn. Analyzed weather conditions include temperature, wind direction, wind speed, humidity, and wind mixing height. Wind direction is often chosen to minimize smoke disturbance for nearby properties.



Burn breaks, or areas where fire will naturally diminish, are established on all perimeters through roads or by mowing and removing debris. The pattern of fire ignition and suppression is designed to create a line of low-flame fire that moves across the property. Crew members with fire ignition gear will start the



fire along a downwind perimeter so the fire will burn slowly up into the wind across the property. Once the perimeter has sufficient burnout areas, this process will continue into the interior of the property. This process is designed to ensure slow moving, low flame fire that allows smoke to be carried upward. Crew members with fire suppression equipment constantly monitor all areas of the prescribed burn. Once the burn is completed, crew members will monitor

the property through the evening and following day to ensure all flames are extinguished.

References and Additional Resources: [Indiana Department of Natural Resources Utilizes Prescribed Burns](#)

[Prescribed Fire at Hoosier National Forest](#)

[National Park Service on Prescribed Burns to Prevent Wildfires](#)

[U.S. Department of Agriculture – Fire in Eastern Oak Forests](#)

[U.S. Department of Agriculture – Restoration of Midwestern Oak Woodlands and Savannas](#)

[U.S. Department of Agriculture – Pyrodiversity Promotes Pollinator Diversity in a Fire Adapted Landscape](#)