

Multi-LCC Mississippi River Basin / Gulf Hypoxia Initiative  
High Impact Conservation Practices – Fact Sheets

## **Practice #5 – Prescribed Fire**

*Updated 18 February 2016 (draft for review)*

### **WHAT IS PRESCRIBED FIRE?**

Across the Mississippi River Basin, fire is a natural and vital part of the ecological system. Modern human settlement has led to a widespread policy of fire suppression, a policy that has ironically increased the severity of fire and decreased the health of many naturally occurring, fire-dependent ecosystems (including both grasslands and oak savannas).

Prescribed fire is the reintroduction of fire disturbance into these fire-dependent ecosystems. A vital and powerful management tool, prescribed fire counterintuitively helps to restore and maintain crucial nesting and feeding habitat and constitutes a shift in land management practices across the Mississippi River Basin away from fire prevention. By understanding fire ecology and managing the application and timing of fire events, land managers can receive the benefits of fire on the landscape without the adverse risks of more severe and unpredictable wildfires.



### **WHY PRESCRIBED FIRE?**

Many of the signature ecosystems of the Mississippi River Basin rely on fire disturbance for their health and resilience. Adapted over countless years, the vegetation of these ecosystems requires periodic fire events in order to complete their life cycles and maximize their success. In the absence of regular fire events, organic debris builds up in these landscapes, and the inevitable fire that does eventually occur is much more destructive than more frequent natural fire disturbances.

Prescribed fire is an important management tool that can be used to restore and maintain crucial habitats and ecosystems. In fire-dependent communities, prescribed fire promotes the growth of native vegetation and cycles nutrients back into the soil, resulting in an overall healthier ecosystem and soil substrate. Regular fire disturbance also minimizes the spread of destructive insects and disease and suppresses invasive plant species (both native and non-native) not adapted for such a fire regime. Fire can also be used to help prepare a site for conversion from non-native vegetation to a diverse native plant community. Over the long

term, increased natural vegetation, decreased invasive species, and healthier soil result in better nutrient, water, and soil retention. This reduced erosion effect improves downstream water quality for both people and wildlife.

## **WILDLIFE BENEFITS**

Appropriate and effective prescribed fire management can have numerous beneficial impacts on wildlife populations, including the increased availability of food immediately following a fire event. Many flora species of fire-adapted communities germinate quickly following a fire disturbance, producing fruits and seeds that are beneficial to quail, turkey, and a variety of grassland birds. Relatedly, fire events remove leaf and vegetative litter from the ground, resulting in improved foraging efficiency and mobility for many ground-dwelling grassland species. Prescribed fire also reinvigorates and enhances vegetative growth and structural diversity, increasing the available habitat niches for grassland wildlife. As a result, many wildlife species prefer areas that have been managed for prescribed fire due to the abundance and variety of native vegetation.

Overall, promoting habitat diversity is a primary factor in maintaining healthy wildlife populations, and few management techniques provide as many benefits as prescribed fire. Where fire has been a natural part of the ecosystem for thousands of years, prescribed fire disturbance can reinvigorate habitat and provide multiple benefits for a plethora of wildlife species.

## **INSTALLATION & COSTS**

When implemented with existing agency personnel, prescribed fire is a management tool with few direct costs. However, costs can increase significantly if private contractors are used in the place of existing staff. What costs do exist originate primarily in the personnel requirements for effective and safe prescribed fire utilization, and can be highly variable depending upon the location and available personnel or contractors.

## **MONITORING (TBA)**

Joint Ventures for birds?

## **LIMITATIONS/CONSIDERATIONS**

Although prescribed fire is an important tool for restoring and managing grassland habitat, the loss of grasslands and the fragmented nature of remaining grassland habitat requires a thoughtful process of implementing prescribed fire to insure that habitat refugia are provided on the landscape, especially for at-risk species (particularly insects) that may require unburned patches maintain populations and recolonize burned areas. In addition, utilizing other grassland management techniques (e.g. grazing, mowing, spot-treatment of herbicides) in

combination with prescribed fire, and varying the timing and frequency of fire and other management practices on the landscape, are important factors in maintaining vegetative diversity.

Fire is often perceived poorly by the general public. Much of this perception is due to the confusion between wildfire and prescribed fire, and to decades of severe fire events due to the long-term consequences of fire suppression. However, even where the concept of prescribed burning is accepted by landowners and the general public, a significant barrier to burning involves the potential liability issues associated with putting fire on the landscape, especially on private lands. As a result, providing information and technical assistance is a vital and necessary component of any prescribed fire program.

## **RESEARCH, PROGRAMS, AND MORE INFORMATION**

Eastern Gulf Coastal Plains Joint Venture

Noble Foundation

## **OPPORTUNITY AREAS**

TBA

## **SOURCES**

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