

# The Art and Science of Prescribed Burning

by Jeff Murray, Restoration Ecologist

Historically fire has always been a natural part of grassland and forest ecology and has helped sculpt our landscapes in the Midwest for thousands of years. Generally wildfires were left to burn because they did not pose an immediate threat. They were also known to have been used as a tool by early settlers, including Indians, to clear places for villages and agricultural crops. Wildfire suppression did not become a major concern until the late 19th and early 20th centuries when large numbers of settlers starting moving west and fires threatened their lives, homes, and land. As a result, the lack of fire in our region and the introduction of non-native plant and tree species caused our native ecosystems to become overgrown with invasive plants.

Fortunately, for over the past 45 years land managers put prescribed or controlled burning back onto the landscape as a very important and useful management tool. It is termed prescribed fire, because

there is a plan and a set of parameters for conducting these burns. Weather, vegetation or fuel type, and topography all play a role in creating the right prescription. Typically controlled burns are conducted in the early spring and late fall with temperature, humidity, and wind being key factors as to exactly when they can take place—dictated not so much by a date on the calendar, but based more on conditions in the field.

Our native plant and tree species have evolved with fire for hundreds of years and certain species actually rely on it to induce germination. Fire ignites germination, which in turn promotes native species to prosper and the overall diversity of an area is enhanced. With the use of prescribed burning, along with other management practices, our native ecosystems are on the road to recovery.



## The Rx factor

Prior to conducting a controlled burn, a plan or prescription must be implemented. Depending on the size or acreage of the burn determines how many people are needed. A source of ignition and suppression tactics are also thoroughly planned to keep the fire controlled. Fire behavior and knowing how fire is going to react to certain fuel types are important factors in keeping a burn contained. Smoke management is another key factor in prescribed fire, which involves wind direction and speed to control where smoke is going to be dispersed. Smoke management reduces the risk of putting smoke over a roadway to avoid creating a hazard for motorists.

Well-trained crews use different hand tools and water sources from trucks, ATV's, or Indian pumps (water contained backpacks) to help suppress fire. Crews are equipped with fire resistant clothing, helmet, gloves, and boots to stay safe when conducting a prescribed burn. In preparation of a controlled burn, the Illinois Environmental Protection Agency requires an open burning permit for prescribed burning in the State of Illinois. There are also county and local regulations that have to be followed. Other prep work may include mowing firebreaks to create containment lines. This helps crews work in a safe area around the perimeter of the burn unit and reduces the height and amount of vegetation in the containment line.

When done properly, prescribed burning is a very effective management tool for the ecological enhancement of our native landscapes.



John Peters and Anne Basten at Marengo ridge



David Hallberg



Matt Eyles at Silver Creek



Tom Simpson and Gail Brown at Marengo Ridge



Roughly 3,100 acres received prescription burns in 2009–2010.