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# Whisper in the Woods

Michigan's Nature Journal

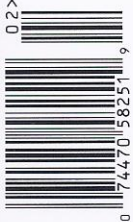


Summer 2005

## Michigan's Prairies

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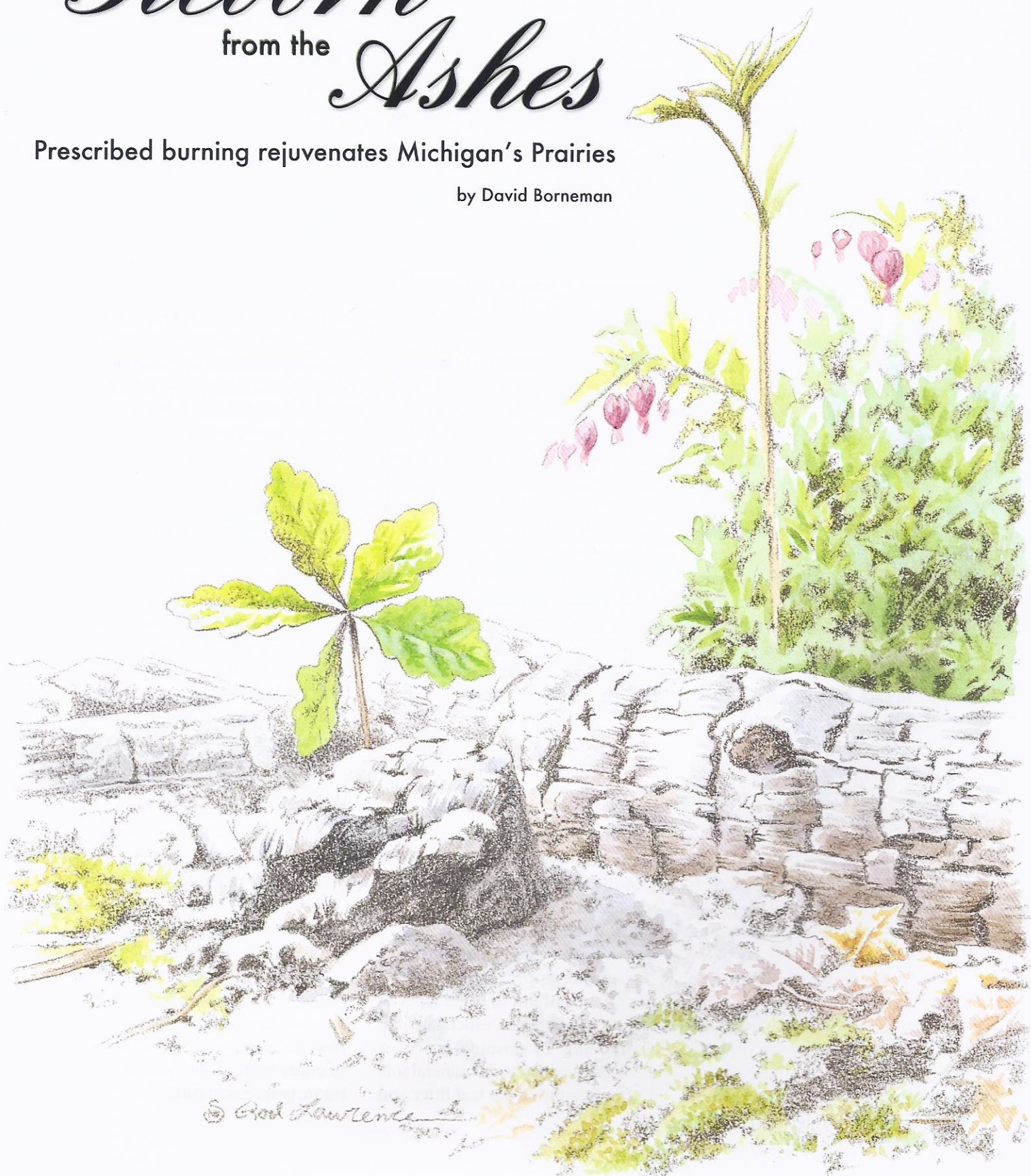
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# Reborn from the Ashes

Prescribed burning rejuvenates Michigan's Prairies

by David Borneman





*Many of our native ecosystems  
prairies, oak woodlands, dunes, even wetlands  
are not only fire-adapted, but fire-dependent...*

If you smell smoke next time you're out for a walk through your favorite natural area, it may not be from a campfire or a wildfire. It may be from an intentionally set, prescribed ecological burn.

For at least the past five thousand years, fire has been a part of the Michigan landscape. Some of these fires may have been started by lightning, especially in our very fire-prone jack pine forests, but Native Americans probably set the majority of them. Fire was an important part of their lives, and thus an important historic force on our early landscape. These fires actually created and maintained Michigan's pre-European landscape. Many of our native ecosystems—prairies, oak woodlands, dunes, even wetlands—are not only fire-adapted, but fire-dependent in the sense that they must be maintained by regular fire, and would be lost without it.

Why did Native Americans burn? Probably for some of the same reasons that modern day land managers, foresters, wildlife biologists, and farmers burn.

When using fire for ecological management, we are attempting to tip the competitive advantage toward the native, fire-adapted species, thus discouraging the non-native (or "alien"), invasive plants, which are often very

sensitive to fire. The use of fire is often prescribed to control alien shrubs such as buckthorn and honeysuckle, as well as herbaceous plants like garlic mustard and spotted knapweed. These are species that did not evolve with fire, as did our natives. Many prairie plants are very deep-rooted, with much more biomass underground than the "tip-of-the-iceberg" vegetation you see above ground. This is in contrast to many alien plants that are shallow-rooted and thus able to get a quick start because they put their resources into the leaves and stem rather than the roots. So when a fire runs through the prairie, the aliens are much more stressed than the natives, which can vigorously resprout from their extensive root systems. In fact, fire returns nutrients to the soil, giving an extra boost to the natives, which are better adapted to exploit these periodic post-burn nutrient pulses. That's why we see such a spurt in the growth of many native grasses following a burn.

Although the benefits of fire to prairies are widely known, there's less public appreciation for the importance of fire to some types of forests in Michigan, especially oak woodlands. To germinate, acorns need direct contact with mineral soil. Burning removes the leaf litter and

allows that contact. Then to grow, oak seedlings need plenty of sunlight—something you won't find under a dense layer of woodland shrubs. Walk through any oak woodland and admire the large oak trees, then look around at your feet and see how many oak seedlings you find. If it is a woodland that has not seen a fire for many years, you'll probably see lots of shrubs or saplings from ash, cherry, or maple—but you won't see many oaks. That former oak woodland is being converted to either a shrub thicket or a different type of forest than was there previously. If you don't want to allow that conversion, fire can help. It will discourage the shrubs and the other tree species, and benefit the oak community by stimulating acorns to germinate and saplings to resprout vigorously. Jack pine forests are even more fire-dependent. Jack pine cones actually need to go through a fire before they'll open and disperse their seeds.

Native Americans used fire to manage for desired species too. Acorns were an important source of food for them and for the game animals they hunted. Though they may not have called it habitat management, Native Americans burned the woodlands to create better habitat for deer, elk, bison, grouse, and turkey. Today, fire

improves habitat for pheasants, and for non-game species such as bobolinks, grasshopper sparrows, and short-eared owls. Native Americans also used fire when hunting, to drive game toward marksmen with spears or bows and arrows. Burning is also an effective way to reduce populations of insect pests and ticks.

Additionally, Native Americans could use fire as a weapon in war, to drive away their enemies. Conversely, if they were worried about an attack, they might intentionally burn the surrounding prairies and woodlands in a controlled fashion rather than giving their enemies the opportunity to burn it for them. Once burned and free of fuel, the blackened area became a safe zone where they could set up camp without worrying about being burned out. This also eliminated many hiding places for an approaching war party and improved visibility so they could better watch for danger. In this sense, Native Americans were practicing what we might today call “fuel load reduction.”

As a modern-day practice, fuel load reduction is more common in the western U.S. where there may be a heavy buildup of pine slash in the forests. It is common here, however, to use fire to clear land and to “open up” the landscape, thus providing a more natural alternative to brush-hogging or herbiciding. In fact, the Natural Resources Conservation Service now accepts fire as a tool on land enrolled in the Conservation Reserve Program (CRP) to keep that land open. Additionally, fire is used in the management of grassland pastures and forage production areas. Native American farmers also used fire to clear fields and increase crop production. This is recorded by early surveyors and mapmakers who noted many instances of “Indian cornfields” in the southern Michigan countryside. It is also well documented that

Native Americans burned bogs and pine barrens to enhance blueberry production, which increases greatly one to three years after a fire.

Of course, despite the long history of fire in our landscape and its numerous benefits, fire can still be quite deadly and should never be used in a cavalier fashion. One escaped fire may be all that it takes to shut down everyone’s prescribed burn program. Anyone responsible for setting a fire for whatever purpose accepts a tremendous amount of responsibility and potential liability. If you’re considering using fire on your land, you need to first spend some time thinking about how that burn can be conducted safely. Where are the fire breaks? Where will the smoke go? What are your contingency plans? The planned burn should be carefully coordinated with the local Fire Department, who may require that you submit a written plan for review before they will issue a permit. So, if you’re not sure that you can handle the burn safely, consider hiring a professional contractor to do the job for you. 🧑‍🔧

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*Illustration by Rod Lawrence.*

