

Perspectives on Ecological Restoration

by Gregory T. Rajskey, CAE

Ecological restoration is an effort to restore functioning relationships between living things and their natural environment. Restoring our natural areas requires the restoration of processes that enable these areas to function in healthy, sustainable ways. The aim of such restoration work generally includes the ongoing protection of native biological diversity through the establishment of self-replicating plant communities to serve as habitat for a full range of organisms that, taken together, function as an ecological whole.

Such work is necessary for a variety of reasons. Human beings have been part of the landscape here in the upper Midwest for thousands of years, often serving as a keystone species with deep-reaching effects on the environment. As a significant element within natural schemes, the human presence has shaped the land in ways we are only beginning to understand. As an agent of natural selection (some would say artificial selection-favoring certain species through artifice), humans have influenced the structure and composition of natural areas to a significant extent, whether mindfully or carelessly at any given time.

Some would propose that the human

influence of earlier millennia was comparatively mindful, in that indigenous peoples used fire to keep the woodlands clear of brush and grasslands clear of trees, that they favored the establishment of plant species that provided fruit, nuts, and other resources that aided in their survival. It has been suggested that the Midwest oak savanna is representative of human agency applied on a landscape scale; that is, that human beings shaped the savanna into an environment hospitable to human habitation.

Some would likewise propose that the human influence of the past two centuries was relatively careless, in that a new wave of settlers came to impose a new ecological regimen favoring intensive agriculture, permanent settlements, the introduction of exotic species previously unknown to the region, and significantly-the suppression of landscape fire.

Especially over the past 20 years, landowners throughout the region have come to recognize that our natural areas had fallen into a state of ecological disorder over the past few human generations. We now see restoration and management as the best hope for maintaining healthy, functioning ecosystems that

represent the natural heritage of this unique place.

Woodlands and savannas in the upper Midwest have become shadier places over the past century as invasive shrubs and trees have proliferated at the expense of native forbs and grasses. Many of the plants that made up the groundlayer flora in these plant communities require abundant sunlight. Because woody plants from Eurasia now shading the ground, many of our native plants have been squeezed into marginal habitats, bordering trails or



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A hearty oak on the Kettle Moraine

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Submissions are best sent to FOVB@mydab3.com

For more information, contact the editor by mail at:
The Bog Log
28478 W. Brandenburg Road
Ingleside, IL 60041

Contributors to this issue: Stacy Iwanicki, Bill Ewert, Gregory Rajskey, Richard Wend & Editor Amy Henschen
Photos & Art: Amy Henschen, Luc Viatour, Gregory Rajskey, Starrynight.com, Johannius Hevelius, Caltech, Ariene Koziol & Dale Sanford

edge openings. Asian honeysuckles like *Lonicera tatarica* and *L. maackii* tend to be amongst the first woody plants to leaf out in the spring. You'll see them bright green against their dull neighbors in April. Eurasian buckthorns such as *Rhamnus cathartica* and *R. frangula* retain their green leaves late into the fall. You'll see them presenting a dark green understory under our native oaks in November. Together, the honeysuckle and buckthorn provide a one-two punch that deprives our native plants of sunlight throughout the entire growing season.

So, one of the keys to savanna/woodland restoration is to return sunlight to the groundlayer vegetation. The resultant, cleared woodland, supports the recruitment of a new cohort of oaks to replace the now-declining, even-aged cohort that sprang up at the cutting of woodlots and the cessation of landscape burning during the 19th century. It also enables the return of sedges, grasses, and wildflowers that thrive in the dappled sunlight of an open canopy.

Increasingly, landowners-be they governmental agencies or private citizens-are discovering the merits of ecological restoration, and practitioners are gradually inventing the methods by which we accomplish the elusive goals of restoration and management.

This is a complex subject, the application of a new science. We are faced with an opportunity to act on behalf of natural systems that appear to be in great peril. Already we have seen that restored woodlands and savannas foster the return of flourishing populations of native species and offer environmental settings conducive to human activities. How we proceed with this knowledge at this critical juncture may well be the basis on which we are judged by future generations.



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A carefully managed burn (top) can rejuvenate an ecosystem, allowing beneficial plants the chance to thrive, while clearing out invasives.