The mighty oak is losing ground in our Illinois forests. Here's what you can do to restore these woodland giants.

Giving Oaks a Place to Grow

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Oaks are losing ground in Illinois forests. Managing woodlands with exotic species control, fire and harvest techniques can reverse the trend.

Although the majestic oak remains the dominate cover type in the central hardwood forests of the United Sates, these pillars of our woodlands are quickly losing ground to a shady competitor. The problem: The potentially devastating displacement of oak species is happening so fast foresters and wildlife experts everywhere are concerned the food supply these oaks offer won't sustain dependant wildlife.

(Photo by Kathy Andrews.)

According to the Illinois Forestry Development Council, there are 236 million oak trees and 208 million maple trees in Illinois. Sounds pretty good, but let's look at some trends.

Between 1962 and 1985, maples increased in acreage from .025 million acres to 1.046 million acres—a fortyfold increase for Illinois. Oaks, on the other hand, decreased in acreage from 2.3 million acres to 2.025 million acres.

Throughout Illinois, mast-producing woodlands are being replaced with a dense understory of shade-tolerant maples.

Why is this?

Our forests have been invaded. Exotic plant species, such as buckthorn (*Rhamnus cathartica*), honeysuckle (*Lonicera japonica*) and garlic mustard (*Alliaria petiolata*), have taken over the understory in most oak-hickory dominated woodlands in northern Illinois. This is a problem especially when it comes to oak regeneration for one reason: Shade.

These invasive plants are shade-tolerant, so they thrive in the woodland understory, shading out species, such as oaks, that are intolerant to shade.

To make things worse, researchers have found that garlic mustard kills the native micorrhizal oak-root fungi that assists oaks uptake water and nutrients.

(Photo by Adele Hodde.)

The nuts produced by oaks, hickories and walnuts are preferred foods for many species of wildlife, including squirrels, deer, wild turkey, blue jays and wood ducks.

With this fungus absent, the growth of oaks is slowed by nine times.

Clearly, the removal of exotic species is the first big step in achieving oak regeneration.

The second hurdle to jump to reach the oak regeneration finish line is providing adequate sunlight. Oaks, hickories and walnuts require full sun to grow and produce the hard mast (nuts) so many wildlife species depend upon. Oaks are a disturbance-based species, meaning they require fire, windthrow (uprooting or breaking of trees by wind) or a timber harvest to regenerate. If disturbance is removed, an oak-hickory woodland will convert to shade-tolerant species, such as maples and beeches.

Landowners wanting to perpetuate oaks have three options to consider.

If the woodland is an uneven-aged stand of oak seedlings, saplings and mature trees, it may be in good shape and the best management decision may be to do nothing.

The second—and cheapest—management tool for maintaining oak woodlands is fire. Oaks, hickories and walnuts are adapted to fire, whereas the shade-tolerant maples are not. Not only does fire reduce the leaf litter and prepare a good seed bed for acorns to become established, it also is useful for controlling small-diameter exotics.

Prescribed fire is the cheapest management tool for maintaining an oak woodland.

And, finally, one of the biggest reasons oaks aren't regenerating is due to lack of harvesting (a well-managed oak woodland can be harvested every 10 years). A few harvest methods that will satisfy the light requirements that oaks need to regenerate, include group selection, clear-cutting and shelterwood harvesting.

Group selection harvests are usually small, 0.5-1 acre in size, and intended to mimic natural disturbance. In a 20-acre lot, dividing the lot into a number of 2 to 5 acre parcels for harvest will create an uneven-aged stand of oak and hickories.

Clear-cutting removes all trees that are 2 inches in diameter or greater. Seedlings will regenerate from existing seed in the leaf litter, and from mast produced by surrounding trees. Root and stump sprouts also will help regenerate the stand.

Finally, the shelterwood system establishes a new generation of trees under the shelter of mature trees. Once seedlings become established, the canopy is removed to allow full sun.

Land management decisions are best undertaken in consultation with a trained forester. Through the Illinois Forestry Development Act, private landowners may receive professional and financial assistance in maintaining and perpetuating their woodlands.

For information on the Illinois Forestry Development Act and a listing of Department of Natural Resources foresters, visit dnr.state.il.us/conservation/forestry.

Don't get discouraged if your woodland isn't everything you'd like it to be today.

With the removal of exotics, and the harvesting and cutting of trees, the downward trend of oaks in Illinois woodlands can be reversed.

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