Reforestation 101: Canopy Thinning

As the glaciers receded from our region over 12,000 years ago, Native Americans moved into the landscape and began shaping it with fire. They burned the woodlands, savannas, wetlands and prairies regularly to promote the growth of food plants and to attract game species. These fires ensured that fire-tolerant oaks and hickories dominated the landscape. The open canopy of these habitats allowed sufficient sunlight to reach the ground so that a diversity of fire-tolerant wildflowers, grasses and shrubs could thrive. These plants in turn supported a diverse array of wildlife including beneficial insects, songbirds, reptiles, amphibians and mammals.

Fire suppression during the past 170 years, deer overbrowse and human-created disturbances have caused many changes in these woodlands. Without fire, the woodlands have been invaded by aggressive, shade tolerant understory trees such as maple, ash, cherry, elm, basswood and box elder. These trees closed the canopy, creating a darker, more forest-like environment. Little light remained for oak seedlings and diverse ground layer plants. In addition, a growing deer population browsed the oak seedlings and native plants. These unbalanced ecosystems were ripe for invasion by non-native species such as buckthorn, honeysuckle and garlic mustard, which are not controlled by our native pests.

Our oak-hickory woodlands are now nearing a breaking point. Deer browse and dense shade combine to create a situation in which oak seedlings have a difficult time sprouting and surviving; once the old trees die, the oak woodland will expire. In order to save our woodlands we must take an active role, including the removal of invasive species, thinning out aggressive native tree species, initiating a regular fire regime and reestablishing and promoting native woodland plants. This article will briefly discuss tree canopy thinning.

Canopy Thinning

Thinning operations should be included in a woodland management plan and overseen by an arborist. The timing of thinning will depend on the species and rate of growth. Canopy coverage over an area should range from 30% to 80%, depending on the soil type, slope and aspect (compass direction) of the woodland being restored.

Visual assessment

Each property requires individual assessment. A visual check will show where tree crowns are overlapping and thinning is needed. The aim should be to create a "ring of sky" around each tree that is retained, and into which it will spread. The woodland edge should normally be left unthinned, to create dense, branching growth which shelters the woodland from the

wind. Trees can be selected to give a variety of form and structure, and to break up planting lines.

Selective thinning

This technique involves individually selecting trees for thinning, normally removing those that are weak, diseased, forked or dead, and retaining the strongest, straightest and healthiest trees. Where growth is good throughout a property, the removal of viable trees may be necessary. Selection of trees should be made in winter, when the crown and upper stem can easily be seen.

To learn more about canopy thinning, native species planting and the Village's revised tree planting and invasives removal programs, please attend the RPC's fall program "Reforestation 101: Techniques for Stewardship of our Amazing Riverwoods Woodland Asset and New Ways to Get Support from Our Village" on November 10, 2010 at 7:30 pm in the Riverwoods Village Hall.

References:

1. Morton Arboretum website
2. NRCS Missouri Open Woodland Information Sheet, *Conservation Practice Information Sheet (IS-MO643w), April 2008*
3. Good Oak Ecological Services website