

The Allure and Liability of Japanese Maple

A sea of colors from Japanese maples at Woodend Sanctuary before forest restoration efforts.

The majestic colors of changing leaves are a highlight of the fall season. Native species like red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), scarlet oak (*Quercus coccinea*), and American beech (*Fagus grandifolia*) are abundant canopy forest trees that brighten the mid-Atlantic landscape each autumn with brilliant reds and golds. Another tree well known for its fall color is the Japanese maple (*Acer palmatum*), with a mature height of up to 35 feet. Native to Japan, Korea, and China, Japanese maple (JM) is widely planted throughout the world.

There are hundreds of cultivars of JM available. The most popular are those that boast a striking red color in fall such as 'Bloodgood' and 'Crimson Queen'. JM is easily identified by its opposite, typically 7-lobed leaves (sometimes with 5 or 9 lobes). The twigs are red to green and end in a pair of terminal buds. The bark is tan to gray with vertical stripes. Although beautiful and easy to grow at home, JM and its cultivars are invasive and pose a

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PHOTOS BY THE AUTHOR

serious threat to our forests. JM provides little benefit to native wildlife and, when abundant, can displace native plant species. Localized invasive populations have been reported in the Mid-Atlantic and northeast US. The widespread use of this species in the landscape increases the likelihood that more invasive populations will appear.

At Woodend Sanctuary, Nature Forward's headquarters in Chevy Chase, JM has become incredibly invasive over the years. A history of Japanese horticulture on this old estate property, combined with urbanization and an increasing white-tailed deer population, has resulted in JM now occupying about 25% of the subcanopy in Woodend's forest. In a 2018 survey of the forest, over 800 JM individuals were recorded and it was the number one regenerating tree species in the forest understory. Despite its prevalence, the good news is that all

the species' stems are relatively small, taking up only 3% of the tree space within the forest. In comparison, tulip tree (*Liriodendron tulipifera*), a large canopy tree that reaches a height of 80-120 ft., was found to occupy 25% of all stems in Woodend's forest and dominate 89% of the tree space.

The dominance of tulip tree speaks to the young condition of Woodend's forest. Transitioning from Native American stewardship (1600s), to devastating tobacco production (1750s), and then to cultivated gardens (1920s), the forest at Woodend has been completely altered. After 200 years of intensive agriculture, the forest was allowed to regrow and begin its successional process towards a more mature state.

In this region of Maryland, older forests are typically dominated by oaks and hickories, along with other hardwood trees. During the typical successional trajectory, these forests pass through a tulip tree-dominant stage during which the first closed canopy develops.

Effectively shading themselves out of the regenerating species layer, tulip trees are slowly replaced by oaks and hickories which become more and more abundant in the forest understory. As tulip trees reach maturity and begin to senesce, gaps are created. In an undisturbed ecosystem, oaks, hickories, and other hardwood tree species would normally fill these voids to form the next generation of the tree canopy. However, as Woodend's forest was progressing through the tulip tree stage, it was interrupted by an increasing white-tailed deer population in the early 2000s that ate the young native hardwoods. As a result, Woodend's understory is now dominated by Japanese maples, which are avoided by deer and suppress natives.

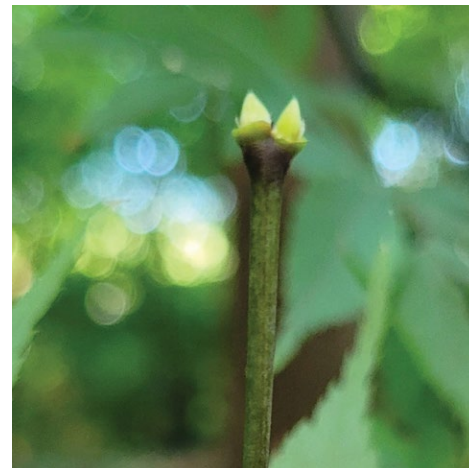
In order to combat these adverse effects, Nature Forward developed management strategies to reduce Japanese maple abundance and increase native woody plants within Woodend's understory. These strategies included: 1) deer exclusion, 2) Japanese maple removal, and 3) native tree and shrub plantings.

Deer Exclusion

Exclusion of deer was selected as the first management action because this would facilitate future native tree plantings within the deer protected area. In 2018 a 10-foot tall chain-link fence was installed around 33 acres of Woodend's 40 acre property along with 21-foot wide cattle grates at the vehicle entrances. The deer population on this parcel of Woodend was immediately reduced from 33 to zero deer. At times, deer are able to re-enter the property. When this happens volunteer events are organized to herd deer back into neighboring Rock Creek Park. With deer excluded, natural regeneration is able to resume. However, in



Left to right: A dense stand of young Japanese maples with an otherwise bare understory; A pair of terminal buds at the end of a Japanese maple twig. The buds are hidden within leaf petioles throughout the summer.



areas with dense stands of JM trees, heavy shading and lack of available ground continued to exclude native plant species.

Japanese Maple Removal

Large-scale removal of JM followed successful control of the resident deer population. JM trees were only removed in areas where immediate native plantings were planned. Removal was conducted with hand saws and chainsaws followed by cut-stump treatment with a triclopyr-based herbicide. Removals allowed the native plantings to take advantage of increased light availability. Debris from the removal project was used to construct natural wattle fences to guide visitor traffic on Woodend's forest trails. Today, less than 400 JM trees remain—roughly half the population of 2018. Nature Forward is continuing to reduce JM abundance and increase the presence of native species.

Native Species Plantings

Native trees and shrubs, including white oak (*Quercus alba*), northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), arrowwood viburnum (*Viburnum dentatum*), downy serviceberry

(*Amelanchier arborea*), red chokeberry (*Aronia arbutifolia*), and many other species were installed in areas cleared of JM. The tree species were chosen for their importance as forest canopy trees in this region and their importance for wildlife.

Management actions at Woodend have been successful at controlling JM and reducing its spread. You can also take actions at home and in your community to reduce the potential spread of invasive JM into our local forests and natural areas. Always consider using locally native plants from reliable growers and support policies that encourage the use of native plants in our communities. For striking fall color, some good alternatives include flowering dogwood (*Cornus florida*), black gum (*Nyssa sylvatica*), and staghorn sumac (*Rhus typhina*) (see photo on p. 5).

Members of the public are welcome to visit Woodend Sanctuary (8940 Jones Mill Rd Chevy Chase, MD 20815) to see the forest restoration project. Please contact Nature Forward Habitat Manager and (new) MNPS Board Member Bradley Simpson at: bradley.simpson@natureforward.org.

REFERENCES

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