





Norway Maples

FRIEND OR FOE: A WOLF IN SHEEP'S CLOTHING

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Norway maple (*Acer platanoides* L.) was introduced to North America from Europe. The trees are easily cultivated and have been domesticated with many different cultivars or varieties. They are commonly planted as ornamental street trees because they tolerate salt and are able to grow in small spaces and compacted soils. Now they occur increasingly where they have not been planted and not wanted. In some natural areas they are becoming the dominant species, a problem reported from New Jersey to Ontario and even in Gaspésie, Quebec.

Norway maples have several characteristics that facilitate their expansion. They produce many seed every year. The seeds, leaves, seedlings and twigs are not eaten by our local fauna. The seedlings out-compete other species and they are also allelopathic to other species. Seedlings grow well in deep shade and under mature trees and create deep shade which prevents native seedlings and herbaceous understory plants such as trillium (*Trillium*

sp.) and trout lily (*Erythronium americanum*). Even established trees grow more slowly due to the allelopathic effect of Norway maples.

Our questions are: are we slowly losing our native sugar maple (*Acer saccharum* Marsh.) to Norway maples to the detriment of our timber and sugar industries, and what will be the financial and ecological costs to our local timber and sugar industries, and to biodiversity in general?

Background

Norway maples were sold as a tree in North America in 1756 from Europe. Its native range is continental Europe from Norway southwards to the Mediterranean Sea. They have lime coloured flowers in

Adjacent: Since the demise of our elm trees, Norway maples have become an increasingly popular urban species (photo: Anne-Marie Roussy). Above: Norways produce a large number of seeds and out-compete other species (photo: istock).



Invasive Norways

AND THEIR POTENTIAL SPREAD INTO WOODLOTS

Figure 1: Current Situation



Figure 2: In 20 Years



the spring and are insect pollinated. Norway maples became popular as an ornamental tree after WWII when the native white elm (*Ulmus americana* L.) was devastated by Dutch elm disease. Norway maples were planted to replace the dead elm trees because they grow quickly and create lots of shade.

There are many cultivars of Norway maples planted in North America. The most popular is the 'Crimson King,' which can be easily identified by its deep maroon leaf colour. Many other green-leafed varieties and cultivars are planted and are easily confused for sugar maples. Dirr (1998) reported that Norway maple is one of the top five shade trees produced in the USA.

The leaf form and general size of the tree make it a good substitute for sugar maple in the horticultural business. Thus, they are excellent street trees for cities and towns. Landscapers and homeowners ap-

preciate these features. Norway maples tolerate pollution and salt and grow well in compacted soils. The leaves also last longer on the tree than those of sugar maples, extending the fall foliage colour. Many different varieties have been bred with many different leaf colours and shapes. The different tree shapes allow more creativity for landscapers. Furthermore, Norway maple is more frost tolerant in the spring and fall than is the native sugar maple.

ice damage, as was observed in the big ice storm of 1998 in Montreal. They are also susceptible to frost cracks during the winter. Tar spots and powdery mildew are commonly seen on the leaves, leaving unsightly marks, especially during the fall. In Ontario, they are the preferred host of the Asian long-horned beetle (*Anoplophora glabripennis*). Most of the cultivars fall leaf colours are pale in contrast to our native hardwoods in Ontario. Norway maple has brittle wood compared to sugar maple, making it less desirable to the timber industry. Norway maples have a bitter milky sap that prevents them from being used in the maple syrup industry.

The shade Norways provide prevent other species from growing and their seeds are unpalatable to wildlife, therefore increasing its survivability. Once the Norway maple has reached the canopy level, it creates more seeds with the increase in

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The Problem

Norway maple is an invasive plant species in North America and is altering our woodlots (see Figures 1 and 2 showing the potential spread from roadsides and yard plantings into existing woodlots). Like all invasive plant species, Norway maples have a high seed output, grow in many different soils and light conditions, and are fast growing.

The disadvantages of Norway maples are the following. They are susceptible to

sunlight exposure, and so the cycle accelerates. The general tendency for stands having Norway maples in them is for the Norways to over take and other species to decrease. In the long term, a monoculture results, instead of a diversified stand.

Why do we keep planting them if they are so invasive? Maybe because very few people other than ecologists and biologists know that they are invasive. As far as I have seen, they are not listed on any noxious weed list as they are not an agricultural threat but a forestry and natural areas threat. Most noxious weed acts were formed to manage weeds for the agricultural business not natural areas or forestry and so their mandates are limited to agriculture.

Only a few websites, such as Pennsylvania's Department of Conservation and Natural Resources (DCNR) and the National Park Service (NPS) report them as invasive. Norways are commonly sold in the marketplace. They look like sugar maples and the average person buying a tree

doesn't know the difference. For the nursery and landscape industry, they are good money makers because they survive very well and warranties are upheld. They have an extremely high survival rate when transplanted and immediately when the growing season starts, they fill out quickly giving the satisfaction to the landowner of vigorous growth in the first few years. In the short term, they initially give a good return on your investment.

Identification

Norway maples can be differentiated using various characteristics such as the samaras, leaves, twigs, bark and their white sap. But the easiest characteristics to use are the sap and the samaras. If you break a leaf or twig off a Norway, the sap is white. The sap of native maples is clear. The wings of the samaras are widely spread apart. In native sugar maples, samaras are perpendicular to each other.



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Alternative Species to Plant

Red maples (*Acer rubrum*) are salt tolerant and some of the US roads departments are now planting them instead of Norways. Although they are mostly known for wetter habitat locations, I have seen quite a few on upland dry sites. They are magnificent and are usually single stemmed on drier sites. The fall leaf colour is a brilliant red and stands out among others.

Black gum (*Nyssa sylvatica*) has an upright oval to pyramidal shape and is quite tolerant of different soil moistures

but prefers moist or occasionally flooded soil. When mature, they have a very dark bark and look quite gnarly which gives an interesting aesthetic appeal. Leaves are glossy and oval and in the fall turn a brilliant red. The fruits are small and blue-black in colour.

Among the oaks, red oak (*Quercus rubra* L.) grows just as fast as our native sugar maples. Many people believe that oaks are slow growing but the red oak is quite fast and again, the fall colour is a brilliant red like the previous two species. Younger red oaks have a smooth greenish bark that is quite interesting as a specimen tree.

And finally, plant sugar maples (*Acer saccharum*) as most people want sugar maples and are instead shown Norway maples not knowing the difference. As an example, a neighbour was educated not to buy a Norway maple to plant beside their new laneway. The neighbour went to the

as you completely cut into the cambium. When the soil is moist, especially in early spring, pull out the seedlings either by hand or with a mechanical weeder. For more information on removal, visit DCNR's website: www.dcnr.state.pa.us/forestry/invasivetutorial/norway_maple_M_C.htm.

Some conservation authorities, such as the Toronto Region Conservation Authority and the Credit Valley Conservation Authority, when placing management plans in place for their natural areas, address the issue and remove invasive species such as Norway maples as part of their management plan. Municipal forestry departments are also removing Norway maples from their natural areas. Both the City of Toronto and the City of Mississauga have species lists and landowners within their significant natural areas or corridors are not allowed to plant Norway maples.



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nursery store and brought back a Crimson King, not seeing the Norway maple label. The neighbour had to return to the nursery, return the Crimson King and ask specifically for a native sugar maple. Yes, sugar maples are susceptible to salt exposure, but along private driveways and laneways, one should maybe use more sand instead of salt for traction during our winter months. Many municipalities are already doing so.

Cut down existing Norway maples, where possible, and replant with natives instead. You can also girdle the tree as long

Do a good deed – cut down a Norway maple! ♦

Funding & References

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- Reference: M. A. Dirr, *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Use*. (Stipes Publishing L.L.C., Champaign, Illinois, ed. Fifth, 1998), pp. 1187.