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# LIVING

# Buckthorn invasion

"Aliens have landed and are wiping out the locals."

This fictitious headline is actually not too far from the truth when it comes to the damage caused by



## OUR CHANGING SEASONS

Drew Monkman

common buckthorn (*Rhamnus cathartica*), the scourge of the Kawarthas. This very common wild shrub — or small tree, if you prefer — has invaded woodlot edges, fencerows, fields, hydro corridors, and roadsides throughout much of the southern Kawarthas and especially in

Peterborough and outlying areas. You may even have several growing inadvertently in your own backyard.

Also known as European buckthorn, it is one of many plants known as "invasive species." These are plants that possess aggressive reproductive qualities that enable them to displace our native, natural plant communities. The most serious invasive species are often aliens of European or Asian origin.

A buckthorn can be easily identified at any time of the year once its main characteristics have been learned. It grows up to 20 feet in height and has a spreading, loosely-branched crown with several trunks coming up from the base. The smallish leaves are usually opposite, although alternate leaves sometimes appear. It's like the plant can't make up its mind. The leaves are finely toothed, somewhat glossy, and pointed at the tip. The black fruit usually grows in dense clusters and often remains on the tree all winter. However, because male and female flowers are borne on separate plants, the fruit only appears on female trees. The small buds, which closely hug the twig, are also blackish in colour. The bark is greyish-brown and, in older plants, tends to peel off laterally. When cut, the inner bark is yellow and the heartwood is usually orange. Because many of the dwarf shoots end in a thorn, you need to be careful when handling buckthorn branches.

Don't confuse buckthorn with the similarly-named native shrub, the hawthorn. Hawthorns have long, pin-like thorns which, unlike buckthorn, grow from the sides (and not the tips) of the twigs and branches. Hawthorn has sharply-toothed leaves, and the fruits (haws) are reddish in colour and almost resemble a very small apple. Like the fruit of the buckthorn, the haws often remain on the tree in winter. The hawthorn is an excellent wildlife shrub providing both food and protective shelter. If you want to compare the two species, there is a large hawthorn on the north side of Marina Boulevard, just west of Water Street.

The tiny flowers of the buckthorn bloom in late May, just after the leaves appear, and are pollinated by insects. The fruits are initially green but turn to black when they ripen in late August. Buckthorn leaves stay on the tree much later than leaves of our native species, usually not falling until well into November.

As its name implies, European buckthorn is native to the northern parts of Europe and Western

*Invasive species possess aggressive reproductive qualities that enable them to displace our native plant communities*



Buckthorn, still fully clad in green, growing along Cumberland Avenue several years ago.

Drew Monkman, special to The Examiner

Asia. Due to its hardiness and its ability to survive a variety of soils and light conditions, it was first introduced to North America as an ornamental shrub, mainly for hedges, and first appeared in Ontario around 1913.

Buckthorn gets a bad rap and deservedly so. Once established, it shades and crowds out native vegetation like dogwoods, cherries and serviceberries, as well as herbaceous plants. Because the diversity of plant species in a buckthorn stand is reduced, the area's value as wildlife habitat is also degraded. In some locations, buckthorn forms a nearly impenetrable wall of vegetation that is impossible to walk through, given the thorns. It is interesting to note that these monospecific thickets only seem to exist in North America and not in the buckthorn's Eurasian range.

Buckthorn also serves as a host for crown rust. If there is a field of oats growing next to buckthorn trees, the oats can become infected with the rust. This, in turn, affects both the yield and quality of the oat crop.

There is another reason to dislike buckthorn. Although lost in the "green blur" during the summer, once mid-fall rolls around the sheer abundance of this invader becomes painfully clear. Still fully clad in summer-green foliage, buckthorns stand out against the bare branches of our native trees like sore thumbs. Fence rows in many areas around the city are near monocultures of this tree. I have always felt that this detracts from our sense of place. The maples, cedars and pines that are so characteristic of the landscape help to impart the unique identity

and character of the Kawarthas. Buckthorn does the opposite. You could be looking at a field in Kentucky or in Poland.

There are many reasons why buckthorn has been such a successful intruder. First of all, it tends to do best in areas where human activity has altered the landscape and eliminated most of the established native species that would have otherwise helped to keep buckthorn in check. By cutting down forests, plowing the land, building roads, and creating artificial habitats such as pastures, lawns, and gardens, we have created perfect conditions for buckthorn invasion. It also has an affinity for calcium-rich soils like those of the southern Kawarthas.

Secondly, a buckthorn tree produces prodigious amounts of fruit each and every year. Each fruit contains three or four seeds, and they are very fast to germinate. The seeds of fleshy fruits like buckthorn are able to pass unharmed through the digestive tracts of birds and, in this way, may be deposited far from the parent plant. Birds do not take all of the fruit, however. Much of it falls directly beneath the mother tree, creating a dense understory of seedlings characteristic of common buckthorn stands.

Buckthorn fruit produces a strong laxative effect which probably further assists seed distribution by birds. It is often one of the ingredients of herbal laxatives. In fact, buckthorn seeds have been found in middens at monastery sites in England. This has led to the speculation that the monks not only purged themselves spiritually but also physically!

Because buckthorn is tolerant of

a wide range of moisture and light conditions, it can grow in a variety of habitats. Although the seedlings establish best in high light conditions, they can also germinate and grow in partial shade. However, the light intensity beneath a closed woodlot canopy is usually too low for buckthorn seedlings to establish. They can, however, become established in canopy openings and out-compete surrounding native species. Buckthorn has very rapid growth rates and resprouts vigorously after it has been cut. In fact, up to 20 shoots can regenerate from a single stump!

Buckthorn is also very good at keeping other plant species at bay. In addition to simply crowding them out or blocking the necessary sunlight, it may actually release chemicals into the soil which suppress the growth of native plants. This process is called allelopathic effects.

Research also seems to indicate that, compared to native plants, there may also be fewer natural controls on buckthorn such as insects, mammalian herbivores, and disease. For example, it is one of the few woody plants avoided by both the cottontail rabbit and the beaver.

As already noted, birds are considered to be the main dispersal agents of buckthorn. This is evidenced by the association of buckthorn with hedges, fencerows, and "perch trees." These are tall trees where birds perch, and a thicket of buckthorn appears underneath as a result of the birds' droppings. Locally, buckthorn fruits seem most popular with robins and waxwings. I have read that freezing temperatures sweeten the berries and make them into the

equivalent of an avian ice wine!

There are a number of things you can do to help slow the spread of buckthorn. First and foremost, speak out against the continued fragmentation of our southern Ontario landscape through urban sprawl, the development of new suburbs, country estate housing, golf courses, and new roads which serve to give invasive plants like buckthorn an added advantage.

If you have buckthorn on your property and choose to get rid of it, the plant can be cut near ground level and covered with black plastic to prevent re-sprouting. Another alternative is to apply a herbicide such as glyphosate (Roundup) to the freshly-cut stem or trunk. Follow-up control is essential, however. Otherwise, buckthorn will come back.

When buying new trees and shrubs for your yard, find out what native species are available and use them instead of exotics. For home landscaping and wildlife plantings many excellent native small trees and shrubs are now available from commercial nurseries and at the Ecology Park. They include American elder, red-osier dogwood, alternate-leaved dogwood, American high-bush cranberry, Juneberry, and nannyberry. If you still decide to go with an exotic — some are definitely quite appealing — make sure it is a non-invasive species such as forsythia or a butterfly bush.

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