

Silent, secret invaders

By **Bruce Wenning**/ Special To The Tab

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Throughout human history, people have been the major culprits behind the introduction and use of non-native plant species - often accidentally. Non-natives are termed invasive because they can colonize, spread and crowd out our native plant populations with ease sometimes with greater success than when growing in their native country or region of origin. Most are terrestrial; some are aquatic. This is a silent and secretive process, because there are no plant insect pests or disease symptoms attracting your attention. You see green plants in the woods, fields and gardens, implying that nothing is wrong, but you must look beyond the color green!

I am constantly battling invasive plants that have invaded the Audubon sanctuary where I am the property manager (Habitat, Belmont). These efforts to control invasives are long term, and without dedicated volunteers, they would consume most of my grounds department budget in labor costs each year. Just as an example, for seven years, a small group of volunteers and I have removed more than 25 acres of the invasive, exotic shrub, glossy buckthorn (*Rhamnus frangula*).

According to William Cullina, New England Wildflower Society (www.NEWFS.org), of the 2,814 plant species growing in Massachusetts, almost half of these (1,276) are introductions from Europe, Asia or other parts of the world. Many of these nonnatives, ranging from trees to shrubs to herbs, were intentionally selected and planted because of their specific characteristics - botanical, medicinal, agricultural, horticultural or ecological. Others were introduced by accident; left to their own devices; some of them simply got established.

Whether intentional or not, the long-term presence of most of these introduced plant species has had both powerful and subtle effects on the landscape. Invasives suppress the growth and establishment of our native flora by changing or influencing native plant succession; changing the quality and availability of pollen for bees and wasps; and altering the feeding behaviors of organisms dependent on native plants, among other things. This can have many detrimental effects on the health of our local ecosystems.

We have only limited knowledge of the destructive actions these nonnative plant species have on the many components of a healthy native ecosystem, and much research is needed to enable us to understand the mechanisms fully.

However, we are pretty good at defining what makes nonnative plants invasive. They have at least some of these seven characteristics (Randall, J M. and J Marinelli (Eds). 1996. *Invasive Plants. Weeds of the Global Garden*. Brooklyn Botanic Garden. p 95-96):

1. Invasive plants exhibit longer flowering and fruiting periods than native plants.
2. Some invasive plants leaf out earlier in the spring and retain their leaves longer into the fall, providing an advantage over natives by photosynthesizing longer.
3. Invasive plants can reproduce by vegetative growth and seed.

4. Invasive plants are more attractive to birds and mammals that help distribute them longer distances than wind.
5. Invasive plants produce more seeds (sometimes earlier) than native plants.
6. Invasive plants can germinate and establish themselves on a wider range of soil and climatic conditions enabling them to exploit new habitats.
7. Many invasive plants are shade tolerant and can grow under the shade created by both native and nonnative plants.

More and more exotic plants are being introduced into the United States by the horticultural industry, and the public needs to know how to recognize them. Some plant nurseries and garden centers are providing this information - even some that are selling invasive plants! However, consumers need to be more aware that exotic, invasive plants have been, and currently are, contributing to ecological degradation and loss of biodiversity locally, nationally and worldwide.

Why not buy native plants? Why risk creating ecological damage by purchasing nonnative plants that may become invasive? When plants with invasive characteristics escape our gardens they become the silent and secretive pests of our neighborhoods and our nation.

To read more, see Devine, R S. 1998. "*Alien Invasion. America's Battle with Non-Native Animals and Plants.*" National Geographic Society. and: www.invasive.org, invasives.eeb.uconn.edu/ipane, www.invasivespecies.gov, www.hort.uconn.edu/plants and plants.usda.gov. For a free copy of "*Invasive Plants of the Eastern United States: Identification and Control*," contact Richard Reardon, USDA Forest Service, Morgantown, WV, 26505.

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