PAY ATTENTION TO INVASIVE SPECIES

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In 1999, President Clinton signed Executive Order 13112 requiring each state to organize an Invasive Plant Council for the management of existing non-native invasive species of plants and animals (at various governmental and private levels) and for the education of the public in matters related to non-native invasive species. The Executive Order also charges state invasive species councils with developing and implementing a plan to manage/prevent the future introduction of exotic species from other countries which might exhibit invasive qualities in the United States.

The intent of the Executive Order seems appropriate to most people; purple loosestrife (*Lythrum salicaria*), tree of Heaven (*Ailanthus altissima*), zebra mussel, gypsy moth, Japanese beetle, lamprey eel, and carp are all introduced biological entities that have rapidly established themselves in environments where they were never intended (to the detriment of native species and ecosystems). It is only reasonable and appropriate to have a plan to manage such organisms.

Naturally, like most well intended endeavors, the Executive Order is taking some time to implement—mostly because it is prone to various perspectives on key issues, and because there is more complexity to the issues than one might first imagine. Before I detail these "issues", let me first bring you up to speed with the current status of the Michigan Invasive Plant Council.

Current Status: As of this writing, the Michigan Invasive Plant Council (MIPC) has developed an "Assessment Tool" for assessing invasiveness (of plants) and is ready to begin using the Assessment Tool to evaluate plants that are considered to be of highest priority (as determined by a survey of managers of natural areas throughout Michigan). Plants that are already on the Michigan or Federal Noxious Weeds lists are already banned and assumed to be highly invasive, therefore they are not being assessed.

Although the initial group of plants to evaluate will be those that are the most problematic to managers of natural areas within the state of Michigan, there is a broader list of adventive plants (non-native plants that have been found in natural areas) that will also be assessed. The process is likely to take several years and be ongoing (as new plants come into question).

Practically speaking, anything that is currently published in respect to invasive plants, with the exception of plants on the Federal Noxious Weeds list (which are assumed to be invasive and will not be subject to the assessment process), has not been evaluated and may not have any scientific support.

Even so, various groups, sometimes governmental, have published information with "lists" of what they term invasive plants. In many cases, such lists have been derived from assumptions rather then sound science. Often they are composed, in part, of plants that are problematic in warmer climates, Zones 7–10, or they were listed due to the misapplication(s) of any of the topics I discuss in the following paragraphs.

Geography: Sometimes people overlook geographical (and climatological) differences and jump to inappropriate conclusions. For example, *Lonicera japonica*, Japanese honeysuckle vine, can grow 20 feet or more in a single year in the Midsouth (Tennessee, Kentucky, Carolinas, Georgia). There it produces copious seed which is dispersed (by birds) over spatial gaps away from its initial site of introduction. It has few biological competitors and it can outcompete other species in natural plant communities. Additionally, it can be costly to eradicate.

Not surprisingly, in the Midsouthern states, most people agree that Japanese honeysuckle is an invasive plant. But, what about the same plant in USDA Hardiness Zones 4, 5, and 6a of Michigan—where it grows more slowly and where the growing season is too short for regular and significant seed production, and therefore is relatively contained and easy to control? Common sense would indicate that *L. japonica*, and every other plant, be evaluated by how it behaves in specific local climatological conditions, and not somewhere else.

Know the Biology of the Plant (and its History): Some people have been prone to point the finger at any non-native plants they have encountered in any natural area, and based on that alone, call it invasive. This too, is not logical, as the plant may not have ended up there by natural means. An example of this is myrtle—which can sometimes be found in natural wooded areas.

Myrtle is a dense grower, able to outcompete less vigorous species (one reason that it is such an effective ground cover). But, since it does not effectively reproduce from seed, it cannot disperse across spatial gaps. As it turns out, the reason it can sometimes be found in natural areas is that somebody, one way or another, planted it there! Usually this can be traced to its historical use as a grave site adornment, inappropriately dumped yard waste, or to it being a landscape relic from a preexisting home site (which was either torn down or burned down some time previously). Once eradicated, short of human reintroduction, myrtle will not return to the natural area.

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Properly Identify the Plant (Common Names Are Misleading): If you are talking about purple loosestrife, it is important to indicate that you mean *Lythrum salicaria*—for there are over 30 species of *Lythrum*, many with purple flowers, and thus several different plants that could carry the name purple loosestrife. Not all of them are invasive and some are native. Likewise, one should not talk about an invasive species simply by the genus name *Lythrum* or its common name loosestrife. There are actually several different genera that go by the common name loosestrife. At Hortech we once grew *Decodon palustris*, commonly called swamp loosestrife. The sales of that plant, a native, were ruined because people mistakenly confused it with *Lythrum salicaria*, because we used (in part) the common name loosestrife. By the time we figured out what was going on and switched the common name to willow herb it was too late. That is a shame, because *Decodon palustris* offers erosion control and habitat and breeding ground for desirable fish and bird species, not to mention nectar for hummingbirds and butterflies. Few plants can stabilize shorelines like *Decodon palustris*, and one has to wonder how many feet of shoreline have been lined with concrete or steel because of unawareness of plant species which could do the job and also contribute positively to the environment.

By the way, the common name loosestrife does not imply that plants by this common name bring strife when loosed upon the landscape (as some might misinterpret). Rather, the name is in reference to the folk uses as medicinals which were believed to free or "loose" one from strife (fever, aches, pains, depression, etc.).

Communicate Accurately: The above scenario (*Decodon palustris*) indicates why you should always communicate exactly which plant you are talking about. To do this you must know the scientific name of the plant in question —as most plants go by several common names, and there is a good degree of duplicate use of common names. Similarly, realize that there may be unique features to varieties and cultivars within a given species. In such cases, even if the parent species were to be determined to be invasive, it is conceivable that a variety or cultivar of that species may not be invasive—due to sterility, dwarfism, or some other condition which generally limits its dispersal or reproductive effectiveness. Every plant must be evaluated individually and generalizations must be avoided.

Here are some real life examples of plants that have already shown up on various lists. I think they serve well to reinforce the importance of accurate communication/use of scientific names.

Euonymus alatus **(spindle tree, wahoo, burning bush)**. Although no one is interested in growing this species,

and although it has never been evaluated by MIPC for invasiveness (and possibly would be determined not to be invasive), imagine what happens when someone shoots from the hip and places it on an invasive species list with the notation: *Euonymus* (burning bush), moderately invasive.

What do you suppose happens to the image and sale of *E. alatus* 'Compactus' 'Rudy Haag', or 'Chicago Fire', or *E. fortunei* 'Emerald n' Gold', 'Blondy', 'Emerald Gaiety' or 'Coloratus'?. Can you see how the public might draw improper conclusions and how this might damage your sales of related plants—that are by no means invasive?

Expect Logical Recommendations: Often state or regional agencies or ecological groups have published lists of invasive species, with plant assessments summarized in such broad and vague terms as highly-, moderately-, or slightly-invasive, without telling the public what to do with this information. The result is a confused/misinformed public and possibly the omission of some very effective plants from our landscapes.

In my opinion, every plant that is talked about in such manner should come with a recommendation that tells the public what to do. This may be a recommendation to avoid using a given plant, or it may be a recommendation on how to use the plant or its cultivars responsibly. Since the authors of information about invasives are supposed to evaluate all aspects of any plant that they write about, they should also be accountable for making such recommendations. In the case of the plants I have discussed previously one might expect to see recommendations such as I outline below.

Note: Keep in mind that no plant has yet been evaluated by the Michigan Invasives Plant Council. I use these plants only to illustrate the point that recommendations are essential.

Lonicera japonica **(Japanese honeysuckle vine)** Recommendation: In warmer climates (Zones 7a to 10) *L. japonica* grows very fast and produces viable seed that is distributed by birds and wildlife which allows for natural movement across spatial gaps. When seed is carried to natural areas in Zones 7a to 10 (particularly areas with disturbed soil), it can readily germinate, become established, and overrun shrubs and small trees.

In cooler northern climates, such as growing Zones 4, 5, and 6a of Michigan, *L. japonica* does not generally produce significant mature seed, and therefore has not shown a propensity to jump across spatial gaps. It is also slower growing in such areas and can be eradicated with relative ease. One can safely/responsibly use *Lonicera japonica* as a garden plant in parts of home and commercial landscapes that do not border natural areas. The same is true of cultivars of *L. japonica*. The cultivars 'Aureo-reticulata', 'Halliana', and 'Purpurea' bloom but seldom set fruit in Zones 4, 5, and 6a.

Lythrum salicaria **(purple loosestrife)** Recommendation: Do not plant the species *Lythrum salicaria* in Michigan because it is known to produce copious amounts of highly viable seed and can disperse by seed over spatial gaps by natural distribution (birds, wind, currents) into wetlands where it depletes native plant species and native water fowl habitat.

Note: Sterile hybrids of *L. salicaria* may exist, and may someday be approved for safe use. Please consult your local authorities.

Vinca minor **(lesser Periwinkle)** Recommendation: This plant does not disperse by seed over spatial gaps. However, like other garden plants, it can establish in natural areas if it is dumped there or if it is planted alongside of a natural area and allowed to creep into it. You may safely/responsibly use *Vinca minor* as a garden plant but if your property borders a natural area, you should install an edging that prevents it from creeping into the natural area. Or, you should plant it in parts of your landscape that do not border the natural area.

Remember It's Not About Philosophy The executive order was never intended to be a statement endorsing a philosophy of native plants being better than non-native plants. But, sometimes discussions take a turn in this direction. One viewpoint is that native plants perform better (in their local area) and support wildlife better because they evolved there. My perspective, with 21 years of experience as a grower and gardener of both native and non-native plants, is this:

"Native plants are great in natural areas and in landscape settings—in many cases. But natives are not inherently better adapted to home and commercial landscape settings, nor do they necessarily furnish more or better food or habitat for wildlife. The reason for this is that landscape settings are not the same as natural settings. They are much brighter (due to light reflected from buildings), hotter (from sunlight being absorbed by brick and asphalt), higher in salt content (due to ice control and fertilization), full of disturbed and/or compacted soil with altered microflora and pH (from excavation activities), more polluted (from auto exhaust, mowers, etc.), and are often windier and drier than natural settings. In other words, our landscape settings are not native."

Because our home and commercial landscape settings are not native, it means that the native plants that have evolved in the local natural environment don't always perform (or even survive) as well as plants from other geographic regions. Some of our most useful plants, like Japanese yew, certain types of dogwoods and viburnums, daylilies, and hostas are not native, but they do a terrific job as landscape plants—without posing a threat to our native plant communities. As such they control erosion, beautify our constructed environments, furnish food, nectar, and nesting sites, cool and oxygenate the air, and produce organic matter which enriches the soil and perpetuates the cycle of life.

Image Management: Realize that there have been a few past mistakes (by the nursery community) like *L. salicaria*, which have made the nursery community a target for criticism. In order to protect

your image, you should let the public know about your efforts to be a responsible leader in the issue of invasive species. All members of the green industry should promote their image as those who enhance and beautify the environment. Similarly, we should avoid future incidents (as *Lythrum salicaria*, purple loosestrife) by test growing plants on a small scale and destroying those that demonstrate invasive qualities. And, we should assume the responsibility of educating our customers on the issues associated with invasive species management. Finally, we should get involved in our state invasive plant council and hold its leadership to the standards outlined in this article.

Eventually, I think that we will end up with a workable, generally accepted system of managing invasive plants, but we have a ways to go. To get to this point, nurserymen, landscape designers, and retailers need to get involved. Stop dismissing this issue as hare-brained and not worth your time. You must get involved and pass along your firsthand knowledge of the biological and economic characteristics of the various plants that will be evaluated. If you ignore the issues and stick your head in the sand, inappropriate decisions may be made that will hurt your business, and you will be left crying after the fact—and trying to right the wrong through expensive legal channels. It is more sensible to be involved from the outset and have a hand in the process of developing the system. At the very least, you need to become a member of MIPC (Michigan Invasive Plant Council) so that you may stay abreast of plant evaluations—you may have to plan to discontinue growing/using/selling a given plant. By becoming a member you will also be able to vote on the officers of the invasive plant council in your state. This is another way to help insure that your interests will receive fair representation.

It is through your involvement that we can both preserve our natural ecosystems as well as maximize the positive environmental and asthetic potential of all garden plants.