

## Plants for a Livable Delaware®

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Concerned about issues associated with invasive plants, in 2002 the Delaware Invasive Species Council formed an Invasive Plants Group. The Group's overall goal was to develop a list of invasive and potentially invasive plants in Delaware. This list would form the basis of an effort to promote agreement between the green industry and public about invasive plant issues and to develop support for addressing the issues. Group members represented Delaware's Departments of Transportation, Natural Resources, and Agriculture; the Delaware Nursery and Landscape Association; and Delaware Center for Horticulture. The Group's objectives were the following: develop a list of invasive plants, make recommendations for regulatory action, describe effective control measures, recommend alternative plants, publicize the Voluntary Codes of Conduct, and develop a communication package.

After reviewing invasive plant categorization schemes developed by several states and organizations, the Invasive Plants Group agreed to use a plant invasiveness assessment tool, modeled after a Nature Conservancy environmental assessment tool. This tool utilizes current scientific knowledge about a specific plant, but also allows users to complete the assessment if information gaps exist. Starting with a comprehensive invasive plant list developed by the Delaware State Botanist, the Group developed a priority list of plants to run through the assessment tool. This list of priority plants became the Official Invasive Plant List for Delaware (Table 1). The list includes a number of plants that are currently sold in the nursery trade. The Invasive Plants Group debated the merits and consequences of using the list as an educational guide, versus drafting invasive plant legislation. The consensus was that education about invasive plants should precede any legislation. This would not only give the Nursery and Landscape industry time to adapt, but also engage the gardening public in solutions to invasive plant issues. The Official List was formally announced at a 2003 seminar, "Backyard Invaders." The seminar was targeted towards home gardeners and was held at the Delaware Center for Horticulture. It featured many vendors displaying and selling non-invasive garden choices. The Official List was also presented at the 2004 Annual Meeting of the Delaware Nursery and Landscape Association.

Inspired by an invasive plant-labeling program at Behnke's Nursery in Beltsville, Maryland, the concept of "Plants for a Livable Delaware" was developed. The program's title was chosen, in part, to reflect Governor Minner's efforts to improve Delaware's environmental quality. Plants for a Livable Delaware (PLD) targeted the Nursery and Landscape industry in an effort to position it at the center of solutions to invasive plant issues. The Delaware Nursery and Landscape Association, University of Delaware, Delaware Department of Agriculture, and Delaware Nature Society received grant funding (\$25,000) from the National Fish and Wildlife Foundation for a program to promote sustainable alternatives to invasive plants. "Plants for a Livable Delaware" included promotional labeling and an informational booklet to encourage the purchase and use of sustainable landscape plants and

**Table 1.** Delaware's official invasive plant list.

Category	Common name	Scientific name	Plant habit*
Widespread and invasive			
	multiflora rose	<i>Rosa multiflora</i>	s
	Japanese honeysuckle	<i>Lonicera japonica</i>	v
	Oriental bittersweet	<i>Celastrus orbiculatus</i>	v
	Japanese stilt grass	<i>Microstegium vimineum</i>	h
	Japanese knotweed	<i>Polygonum cuspidatum</i>	h
	autumn olive	<i>Elaeagnus umbellata</i>	s
	Norway maple	<i>Acer platanoides</i>	t
	common reed	<i>Phragmites australis</i>	h
	hydrilla	<i>Hydrilla verticillata</i>	a
	Morrow's honeysuckle	<i>Lonicera morrowii</i>	s
	mile-a-minute	<i>Polygonum perfoliatum</i>	v
	yam-leaved clematis	<i>Clematis terniflora</i>	s
	privet	several species	s
	European sweetflag	<i>Acorus calamus</i>	h
	wineberry	<i>Rubus phoenicolasius</i>	s
Restricted and invasive			
	Japanese barberry	<i>Berberis thunbergii</i>	s
	periwinkle	<i>Vinca minor</i>	v
	garlic mustard	<i>Alliaria petiolata</i>	h
	winged euonymus	<i>Euonymus alatus</i>	s
	porcelain berry	<i>Ampelopsis brevipedunculata</i>	v
	Bradford pear	<i>Pyrus calleryana</i>	t
	marsh dewflower	<i>Murdannia keisak</i>	h
	lesser celandine	<i>Ranunculus ficaria</i>	h
	purple loosestrife	<i>Lythrum salicaria</i>	h
	reed canarygrass	<i>Phalaris arundinacea</i>	h
	Amur honeysuckle	<i>Lonicera maackii</i>	s
	Tartarian honeysuckle	<i>Lonicera tatarica</i>	s
	tree of heaven	<i>Ailanthus altissima</i>	t
	spotted knapweed	<i>Centaurea biebersteinii</i>	h
Restricted and potentially invasive			
	Butterfly bush	<i>Buddleja davidii</i>	s

\*s = shrub, v = vine, h = herbaceous, t = tree, a = aquatic.

reduce sales of invasive species. The booklet was so popular that 2 printings (20,000 copies) were necessary.

The objectives of PLD are to reduce the purchase and use of invasive plants and increase the availability, purchase, and use of regionally appropriate landscape plants. In addition, PLD promoted the removal of invasive plants from privately owned natural lands. This pilot project engaged garden centers, landscape contractors, public parks, and public gardens in Delaware to create a marketing model that could be used throughout the country to promote plants for sustainable landscapes. By targeting a broad base of garden centers and landscapers, desirable alternative plants would become more prevalent in the built landscape and therefore more easily accepted into the plant palette by homeowners. As part of the program, visitors to participating garden centers were interviewed regarding the PLD publication and their knowledge of invasive plants; of those surveyed, 76% found the publication easy or very easy to understand. Twenty nine percent of the respondents indicated that they were planning to purchase an invasive plant, however the signage and PLD booklet convinced 82% to consider buying a "livable" plant instead.

A second grant for the PLD program was received from the National Urban Community Forestry Advisory Council. A new brochure entitled "Controlling Backyard Invaders" was developed. This publication detailed mechanical and chemical methods the homeowner could use to remove invasive plants from their property. It was distributed at the Delaware Horticulture Industry Expo in January 2005, as the Expo's focus was invasive plants. Links to both publications can be found at the following website: <[http://www.state.de.us/planning/livedel/information/ln\\_native.shtml](http://www.state.de.us/planning/livedel/information/ln_native.shtml)>. Delaware's Governor Minner held a press conference at a participating garden center on 20 April 2006 to announce the publication of the PLD brochures and support this initiative.

Delaware is also participating in the Nature Conservancy's "Preventing Invasion Through Horticulture" voluntary code of conduct project. This code was developed at the St. Louis Convention — Linking Ecology & Horticulture to Prevent Plant Invasions, December 2001, St. Louis, Missouri. The Code was endorsed by the American Nursery and Landscape Association and Delaware Nursery and Landscape Association Board.

In 2005, members of the Invasive Plant Group met with the Executive Director of the Delaware Home Builders Association to discuss the Plants for a Livable Delaware Program and possible incorporation into development plans. The Association published an article about PLD in their monthly newsletter and adopted the Official Invasive Plant List.

Continuing the cooperation among Delaware Nursery and Landscape Association, University of Delaware, and Delaware Center for Horticulture, in April 2006 a \$25,000 grant was received from the USDA Forest Service Invasive Program. The grant will support development of a third PLD publication tentatively entitled, "Livable Plants in the Home Landscape." The guide will provide suggestions for native plant combinations as alternatives and replacements for exotic invasive species. This grant will also help to fund implementation of the Voluntary Code of Conduct pilot.

One additional collaborative project was invited for a full proposal to the National Fish and Wildlife Foundation; however it was not funded. The project is entitled, "Habitat Gardens for a Livable Delaware." The project's goal was to remove the

known invasive species *Euonymus alatus* from five locations in Delaware and re-plant with desirable alternatives that attract butterflies and birds. As part of this project, a fourth Livable Delaware publication was envisioned: "Butterflies and Birds: Habitat Gardens for a Livable Delaware." The project sites are highly visible, public places: the University of Delaware campus, Delaware Department of Agriculture, Brandywine Zoo, and Delaware Center for Horticulture.

Plants in Table 1 are non-native to Delaware, have the potential for widespread dispersal and establishment, can out-compete other species in the same area, and have the potential for rapid growth, high seed or propagule production, and establishment in natural areas. Plants on Delaware's Invasive Plant List were chosen by a committee of experts in environmental science and botany, as well as representatives of state agencies and the nursery and landscape industry.

- An environmental assessment was conducted on each of the plants listed, and placement on the list results from review of the scientific literature, as well as a consensus of expert opinion.
- Plants on the list are ordered from highest invasiveness.
- Plants on the list should not be planted under any circumstances and should be removed from properties where feasible.
- Listed plants that are currently in the nursery trade should be phased out of inventory and production.
- Homeowners are encouraged to ask nurseries, garden centers, and landscapers for non-invasive plants, preferably natives.
- Widespread and invasive plants are currently invasive, cause serious management concerns, or pose a serious threat to the biological diversity of Delaware.
- Restricted and invasive plants are equally problematic, however, they have a more localized distribution in Delaware.

This list has been widely distributed to nurseries, garden centers, landscapers, homeowners, students, gardeners, and land managers. A more complete list can be viewed at: <[www.dnrec.state.de.us/fw/wildrehe.htm](http://www.dnrec.state.de.us/fw/wildrehe.htm)>.