

You Ain't From Around Here!

Exotic Invasive of the Quarter: Non-native Wisterias

by: Jennifer Gagnon, Virginia Tech

The first time I saw a wisteria pod was while I was doing field work for my graduate project in the Apalachicola National Forest in the Florida Panhandle. While out on a walk one 100 degree afternoon, I found lovely fuzzy green pea-pod shaped fruits. Thinking I had identified a new species, I rushed back to the house to show my roommate, who informed me that they were wisteria pods, quickly dashing my hopes of having a plant given the species name *gagnonii*. But I still thought the pods were interesting, and kept them.

Thanks to these seed pods, one warm summer night I learned about a reproductive strategy called explosive dispersal. As the pods dry, pressure builds up inside, eventually causing them to burst open with a “pop”, flinging the seeds inside up to 80'. A rather confusing and heart-pounding way to be woken up, mind you, but interesting. Explosive dispersal helps the vine spread its seeds far and wide, ensuring the parent plant won't get chocked out by its offspring. Very clever. Other species which use this strategy include lupines, impatiens, and pansies.

The two most common exotic wisteria species in Virginia are Chinese (*Wisteria sinensis*) and Japanese (*W. floribunda*). Introduced in the 1800's, these climbing vines, with their prolific fragrant blooms, have been widely planted as ornamentals across the U.S. In fact, wisteria is well intertwined (pardon the pun) with American culture. For example, you can take a tour of historic wisteria vines in New York City; or perhaps attend the Sierra Madre Wisteria Festival and view the largest flowering plant in the world (a Chinese wisteria which covers an acre and weighs approximately 250 tons; it is listed as one of the seven horticultural wonders of the world). And, of course, Wisteria Lane is home to some well-known, albeit desperate, housewives.



A tree after removal of an exotic invasive wisteria vine. Can you tell which one? Photo by: Jennifer Gagnon, Virginia Tech.

In addition to taking over large plots of land, the twisting vines grow tightly around the trees and shrubs they use for support – eventually cutting through the bark and into the phloem, interrupting the flow of nutrients from the crown to the roots (called girdling). The vines can also take over the crowns of their support trees, eventually shading them out. As the wisteria kills off overstory trees in forested areas, more light reaches the forest floor. While this is good for the growth of some desirable native species, it is also good for the growth of wisteria...which eventually takes over, ultimately reducing biodiversity. Common areas of infestation include roadsides, forest edges, ditches and right-of-ways – and these are usually a result of escaped landscape plantings. In Virginia, Chinese wisteria is listed as moderately invasive and Japanese wisteria is listed as occasionally invasive. Both are found throughout the Commonwealth.



An odd, pinnately compound wisteria leaf. Photo by: James Miller, USDA Forest Service.

How to identify wisteria

Growth: Deciduous woody vines; up to 70' long. Form dense infestations on wet to dry sites. Vines climb by twining around trees and shrubs (Chinese twines clockwise; Japanese twines counter clockwise) and by root runners.

Older bark: Tight and dark gray-brown with light dots (Chinese); white (Japanese).

Leaves: Alternately arranged; odd pinnately compound (i.e., odd number of leaflets), 4 to 16" long with 7 to 13 leaflets (Chinese) or 13 to 19 leaflets (Japanese). Leaflets are oval to elliptical with tapering pointed tips and wavy edges.

Flowers: Blooms between March and May; the pea-like flowers are lavender to white, fragrant, and grow on dangling showy clusters 4 to 20" long. All flowers open at the same time (Chinese) or gradually from the base (Japanese).

Seeds: Mature from July to November. The flattened oblong legume pods are 2.5 to 6" long and 0.8 to 1.2" wide; velvety greenish to golden brown. Pods contain 1 to 8 flat brown seeds 0.5 to 1" in diameter. These large, poisonous seeds are not generally dispersed by animals. The most common means of reproduction is by root runners.

Note: there is a native American wisteria (*W. frutescens*) which tends not to form dense infestations and occurs in wet forests. The pods of American wisteria are hairless and the older vines are slender compared to the exotic species.



Close ups of wisteria's clustered blooms (L) and pods with seeds ®. Photos by: Ted Bodner, Southern Weed Society and Chris Evans, River to River CWMA.

How to control wisteria:

Mechanical: For small infestations, plants can be hand pulled and roots grubbed out; if the plants have seed pods on them, bag the pulled plants and dispose of them. Climbing vines can be controlled by repeatedly cutting them back, which will help deplete their resources, decreasing growth and preventing flowering; however, the sites will need to be monitored and re-cut regularly.

Chemical: For foliar applications, thoroughly wet all leaves with the recommended herbicide concentration (see table below) mixed in water with a surfactant. For basal bark applications, remove several branches and apply herbicide to exposed cambium. On cut stump applications, cut the vines about 2" from the ground and immediately apply herbicide solution to cut surface using a paint brush or spray bottle. In all cases, monitor the sites regularly and retreat as needed.

| Manufacturer | Product Name | Active ingredient (ai) | Percent ai | Application Method* |
|---------------------|---------------------|-------------------------------|-------------------|----------------------------|
| Dow Agrosciences | Accord | glyphosate | 2%, 25% | F, C |
| Dow Agrosciences | Garlon 3A | triclopyr | 20%, 25% | B,C |
| Dow Agrosciences | Garlon 4 | triclopyr | 4%, 20%, 25% | F,B,C |
| Dow Agrosciences | Glypro | glyphosate | 2%, 25% | F, C |
| Dow Agrosciences | Rodeo | glyphosate | 2%, 25% | F,C |
| Dow AgroSciences | Tordon 101 | picloram | 3% | F |
| Dow AgroSciences | Tordon K | picloram | 2% | F |
| Dow AgroSciences | Transline | clopyralid | 0.5% | F |

*F: foliar B: basal bark, C: cut stump

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