Japanese Wisteria 
(*Wisteria floribunda*)
and
Chinese Wisteria 
(*Wisteria sinensis*)

Identification and Mechanical Control Recommendations for Long Island
History:
Wisteria is an ornamental plant favored by gardeners for its viney nature and draping, aromatic, purple flowers. Both Japanese and Chinese Wisteria were brought to the United States in the early 1800's.

Biology:
Japanese and Chinese Wisteria are long lived, climbing, deciduous woody vines which can reach lengths of 70 feet. Conversely, they can also be cultivated as a shrub. In upland areas, dense infestations are found in close proximity to the mother plant as they tend to escape from garden and landscaping areas by spreading vegetatively via roots and runners. The large seeds of the plant greatly reduces the potential of animals to serve as mechanism for dispersal, however flowing water will transport seeds downstream, spreading the plant.

A leguminous plant, Wisteria has a unique competitive edge over many native plants. It produces its own nitrogen, allowing it to quickly invade even the poorest environments. It survives in dry and wet soil environments equally. In shaded areas, it relies on its viney nature, climbing trees, shrubs, and structures in an effort to reach sunlight. Wisteria girdles, strangulates and shades out these plants, allowing increased light penetration for seedling germination below.

Identification:
Both Chinese and Japanese Wisteria have unique stem, leaf, and flower characteristics which are listed below. However, these two species do hybridize, making it difficult to distinguish.

The stem of this woody vine can reach diameters of 10 inches. Chinese wisteria’s bark, especially in old specimens, is tight and dark grey with lenticels (white dots) while the Japanese species bark is white to brown, with dense hairy branches when young. At interesting characteristic of the growth habit Chinese wisteria is that the stems winds clockwise around the stem while Japanese winds counterclockwise. Alternate branching occurs but is not overly common. Twigs of the plant are pubescent (hairy).

The leaves of both wisterias are alternate, bright green, pinnately odd, compound leaves that are 4 to 16 inches long. A distinguishing characteristic of the Chinese and Japanese species is the number of leaflets that each leaf contains. There are 7 to 13 leaflets for the Chinese and 13 to 19 leaflets on the Japanese. The leaflets are 1.5 to 3 inches long and 1 to 1.4 inches wide, oval to elliptic in shape and terminate with a pointed tip. Young leaves (lets) are very pubescent. With maturity, leaves become hairless to shortly pubescent. The leaflets margins are smooth, but have a wave to them.

Wisteria flower’s begin to bloom as leafing out occurs and extends through June/July? The aromatic flowers indicative of the pea family, cascade down from the branches long clustered racemes. Flowers generally are light purple but can vary from pink to white. The clusters can reach lengths between 4-20 inches, and 4 inches wide. The flower of the Chinese species is showier as the entire flower cluster blooms at one time, while the Japanese species blooms gradually from the base to the tip.
Seed forms from July through September, in a fuzzy, green, flattened, irregularly oblong (2.5 to 6 inch long and 0.8 to 1.2 inches wide), shaped pod that is indicative of a legume. The seed pod is persistent but will split expelling 1 to 8 flat brown seeds.

**Japanese Wisteria (Wisteria floribunda)**

![Japanese Wisteria Flower](http://www.invasive.org/content/epp/japwisteria.html)

**Chinese Wisteria (Wisteria sinensis)**

![Chinese Wisteria](https://www.invasive.org/content/epp/chinesewisteria.html)
Similar Species:

American Wisteria, \textit{(Wisteria frutescens)}

Care should be taken to properly identify the species of Wisteria, as the range of the native Wisteria \textit{(Wisteria frutescens)} extends throughout Long Island. American Wisteria, \textit{(Wisteria frutescens)} differs from the Asian species in that it has much thinner stems, does not form dense infestations and is found in wet forests. The leaves have 9-15 leaflets which come out prior to blooming of flowers. The flowering period of American Wisteria is shorter, June to August, and the resulting seed pods are hairless.

Trumpet creeper, a southern native, can also resemble Wisteria, so accurate identification is necessary.

**Control Methods**

**Mechanism of Spread:**
Spread as a horticulture plant, through seed and suckers.

**Goal:**
Prevent spread by vegetatively and by seed. Drain the roots of stored energy.

**Target:**
The plant should be targeted just as it begins to flower and especially prior to seed set.
Plant Growth/Reproductive Stage Timing:
Bud Break:
Flowering: May 4
Seed Set: June – July
Senescence: October

Eradication Timing:
Eradication efforts should begin as early in the spring as possible, (March – April) which provides an entire season to apply control efforts in order to drain the stored energy from the roots systems. As flowering occurs with leafing out, focusing control efforts in spring will dually prevent seed set.

Concerns:
Both species of Wisteria reproduce vegetatively by suckers from the stump and roots. In order to effectively eradicate this vine repeated effective monitoring and removal efforts should be applied on biweekly basis in during the growing season and annually until eradication is achieved. Failure to follow such a mowing regime will increase the population density of Wisteria.

Regardless of the method of control applied to the Wisteria, as much of the vine should be removed from the host plant. The dead vines entwined around the tree can still cause girdling; a deadly consequence for a tree or shrub. Therefore, as much of the twined vines should be cut from the trunk and those that are draped over canopies should be pulled.

Tools:
Loppers, gloves, chain saw, clippers, Weed Wrench®, Honey Suckle Popper®

Control Procedures:

1. Mechanical Pulling (Smaller populations and/or sensitive areas):
Pulling the vine and roots from the ground are effective methods to remove the plant. The use of the Honeysuckle Popper® and the Weed Wrench® are effective tools to remove the plant from the ground.

The Weed Wrench® is an excellent tool for pulling trees and shrubs, and should be used for larger saplings especially those with a tap root. This tool functions by pulling the tree from the ground by its roots. Slow steady pressure should be applied to the Weed Wrench in order to prevent the tap root from breaking. It is important to get as much of the roots as possible as plant will rapidly and exponentially regenerate from the stump and roots.

The Weed Wrench® is recommended for saplings which have formed a tap root up to the largest caliper size available by the Wrench model. Weed Wrench® is Information and pictures about can be obtained at http://www.weedwrench.com/. This tool functions by uprooting the plant at its base through a lever action, with minimal elbow grease and muscle.

Manufacturer’s directions and safety measures for the operation of Weed Wrench® are attached and should be followed in order to ensure safe and effective removals.

Follow up should occur on a bi-monthly basis in order to target any root sprouts that have formed. These can be pulled or for large infestations, can be mowed. Once the roots are
drained of their energy reserves and no further shoots emerge, monitoring on a monthly basis should occur until the seed bank is reduced.

Care should be taken to removing as many roots from the ground as possible as the roots will send up suckers and restore its self. Pulling of the roots can be eased if eradication activities occur when soil is moist.

2. Cutting and Mowing (Large Populations and/or Older vines):
Using the method of cutting with followed by mowing is an effective way to eradicate Wisteria. Wisteria vine can grow to large diameters so it may be necessary to use hand saw or chain saw to cut the stem. Smaller vines can be effectively severed using hand clippers or loppers. In all cases, the vines should be cut as close to the ground as possible, thereby allowing a mower to easily clear the stump.

Mowing should follow on a biweekly basis in order to cut down the suckers which emerge from the roots and stumps. This should occur early in the growing season in order to provide as much time possible to drain the roots of its storage reserves. Only when the root is killed, will the Wisteria fail to throw up suckers.

Monitoring:
Monitoring regardless of the control method is necessary. Repeat methods will need to be applied (biweekly during the 1st year of eradication and subsequent years) to any suckers or sprouts that occur until the roots, stumps and seed bank are exhausted.

Disposal:
Wisteria vines and roots have the ability to reestablish, therefore, all the plant parts should be disposed of in 3 mil garbage bags. To ensure death of the plant and prevent spread to other areas, these bags should be tightly closed and left in the sun on a hard surface such as concrete or asphalt. Ideally, the hottest months of summer, July and August, will be the most effective in killing vegetation and any seeds.

References:
DCNR Invasive Exotic Plant Tutorial for Natural Land Managers. Species Management and Control Information for Chinese Wisteria and Japanese Wisteria
http://www.dcnr.state.pa.us/Forestry/invasivetutorial/wisteria_M_C.htm

http://www.invasive.org/eastern/eppc/japwisteria.html

http://www.invasive.org/species/subject.cfm?sub=3083


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