

The background of the entire page is a dense field of green, oval-shaped leaves with prominent veins. Interspersed among the leaves are several bright purple, five-petaled flowers with yellow centers. The lighting is bright, highlighting the textures of the leaves and the vibrant colors of the blossoms.

# **Plant Invaders of Mid-Atlantic Natural Areas**

**Revised & Updated – with More Species  
and Expanded Control Guidance**

**National Park Service  
U.S. Fish and Wildlife Service**

## Prevention and Control

Do not buy this plant or release it into the wild (these activities are prohibited by U.S. law). If you think you see this plant, call 1-877-STOP-ANS to report it. If you have this plant and no longer want it, pile plants onto a dry sunny surface (e.g., driveway) and let them dry out completely. Once completely dry, bag them in a sturdy plastic trash bag and dispose of in a landfill. Contact proper authorities about other methods of control and disposal.



Mic Julien, CSIRO



Troy Evans, Eastern KY Univ.

## Hydrilla

*Hydrilla verticillata* (L. f.) Royle  
Frog-bit family (Hydrocharitaceae)

**Origin:** Central Africa

### Background

Hydrilla first appeared in the Crystal River system of Florida in 1960. Imported by the aquarium trade, its presence on the Delmarva Peninsula was confirmed in 1981. It attracted national attention when infestations were found in the Potomac River in Washington, D.C. in the early 1980s. It is a federal noxious weed.

### Distribution and Habitat

Hydrilla is documented throughout the southern United States from California to Delaware. In the mid-Atlantic, it occurs in much of the Potomac River, in Virginia and Maryland freshwater tributaries of the Chesapeake Bay, in the Delaware portion of the Nanticoke River,



Robert Vidéki, *Doronicum* Kft.

# CONTROL OPTIONS

## GENERAL GUIDANCE FOR MOST SHRUBS

Use pesticides wisely: always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations. Notice: mention of a trade name does not constitute the endorsement of the product by authors, agencies or organizations involved in the production of this publication.

### Chemical

Two of the more widely used systemic herbicides are glyphosate and triclopyr. Systemic herbicides are absorbed by plant tissues and carried to the roots causing the entire plant to die usually within about a week. Glyphosate is a non-selective herbicide that may kill or harm any plants that come in contact with the spray. It carries a Caution signal word and requires long-sleeved shirt, long pants, shoes and socks during application. Glyphosate products referred to in this publication are sold under a variety of brand names (Accord®, Rodeo®, Roundup Pro® Concentrate) and in three concentrations (41.0, 50.2 and 53.8% active ingredient). Other glyphosate products sold at home improvement stores may be too dilute to obtain effective control.

Triclopyr is a selective herbicide that affects only broadleaf plants (e.g., forbs, shrubs and trees) and can be used in grasslands or areas where desirable grasses are growing under or around targeted woody or broad-leaved invasives. These herbicides have low soil activity, so do not pose a threat to groundwater if applied properly and at recommended label rates. Triclopyr comes in two forms – triclopyr amine (e.g., Garlon® 3A, Brush-B-Gone®, Brush Killer®) and triclopyr ester (e.g., Garlon® 4, Pathfinder®, and Vinex®). They are very different products with very different specific uses, hazards and precautions. Triclopyr amine mixes with water and can be used near water without posing a threat to aquatic organisms and can be used as a cut stem treatment at a 50% rate or a foliar treatment at 5% rate. It is not effective for basal bark treatments. However, the amine form of triclopyr carries a Danger signal word due to its corrosive properties which, in concentrated form, can cause irreversible eye damage. For this reason, it should only be used by trained and certified applicators who are familiar with this hazard and know the precautions that need to be taken when using it.

- Spreads: by seed, which is dispersed to new areas by many species of birds and by people who are not responsible when disposing faded bittersweet wreaths and other floral decorations; it expands locally by stolons and rhizomes and through root suckering (the ability to send shoots up from the roots).



Chris Evans, River to River CWMA

- Look-alikes: easily confused with the native American bittersweet (*Celastrus scandens*), which produces flowers just at the terminal ends (stem tips) rather than from multiple leaf axils as in the exotic invasive. Because of this, it is imperative that correct identification be made before controls are attempted.

### Prevention and Control

Do not buy, plant, transplant Oriental bittersweet or dispose of live or dead seed-containing material. Manual, mechanical and chemical methods can be employed to control it. Vines can be pulled out by the roots, cut repeatedly or treated with systemic herbicides (see Control Options). No biological controls are currently available for this plant.

### Native Alternatives

Caution: Although our native bittersweet (*Celastrus scandens*) would be an excellent alternative plant to use as an alternative, many nurseries often confuse it with the exotic invasive bittersweet under the native label. Be certain of the species you are buying or choose another plant. Also, because of hybridization between the native and exotic species, many feel it is irresponsible to plant the native species when the invasive occurs in the area.

## Pale Swallow-Wort

*Cynanchum rossicum* (Kleopow) Borhidi  
Milkweed family (Asclepidaceae)

**Origin:** Endemic to southwestern European Russia in regions north of the Black Sea and the Caucasus

### Background

The first collections of pale swallow-wort in the northeastern United States were from Monroe and Nassau counties New York in 1897. Canadian records indicate that it was established and probably naturalized in southern Canada since the early 1900s.