



March 31, 2020

Ref: 42495.00

Ruben Flores-Marzan
Town Planner
Town of East Windsor
Inland Wetlands and Watercourses Commission
11 Rye Street
Broad Brook, CT 06016

Re: IWWC Application 05-2020-Invasive Species Management Plan- 3 Thompson Road, East Windsor

Mr. Flores-Marzan,

Vanasse Hangen Brustlin, LLC (VHB) has prepared the following Invasive Species Management Plan for the 05-2020 Inland Wetland and Watercourses Application regarding the remediation project at 3 Thompson Road.

INVASIVE AND NOXIOUS SPECIES CONTROL PLAN

1. Risks

The area planned for activity is under a moderate risk for the establishment of invasive or noxious plant species. Activities proposed within the wetland area will include excavation and planting of the wetland to re-establish a palustrine forested system. The dense planting and seeding proposed will reduce the risks for establishment of invasive's, however monitoring and eradication will be a critical method for control.

Portions of the areas to be disturbed contain flowing water during wet seasons, which will not support most invasive plants. Where present, invasive species may alter vegetative communities by out-competing for habitat through the physical crowding-out of native species, may interrupt natural succession, and may reduce the overall biodiversity of an area or community. Invasive species are aggressive in their reproduction, and may spread, and persist within a community, all at levels with which native species cannot compete. The table below has been compiled based on field investigations which have identified the listed invasive species as being present or having the potential to be present in the project area. A complete list of invasive species for the State, as compiled by the Connecticut Invasive Plant Working Group (<http://cipwg.uconn.edu/wp-content/uploads/sites/244/2014/12/CT-Invasive-Plant-List-2014Scientific-Name.pdf>) should be consulted prior to executing a field management plan.

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Common Name	Scientific Name	Wetland Indicator Status
Asiatic Bittersweet	<i>Celastrus orbiculatus</i>	UPL
Multiflora rose	<i>Rosa multiflora</i>	UPL

OBL: Occur almost always, under natural conditions, in a wetland (probability: >99%)

FACW: Usually occur in wetlands (probability: 67-99%), but occasionally found in non-wetlands
FAC: Equally likely to be found in wetlands or non-wetlands.

FACU: Usually occur in non-wetlands (probability: 67-99%), but occasionally found in wetlands (probability: 1-33%).

UPL: Occur in wetlands in another region, but almost always occur (probability: >99%) under natural conditions, in non-wetlands in this region. If a species does not occur in wetlands in any region, it is not listed.

2. Constraints

The main constraint for managing invasive plants associated with the project is managing the upland-wetland interface where multiflora rose (*Rosa multiflora*) species occur. The limited population along the upland edge between Wetland 1 and a mowed/landscaped area by the parking lot provides scrub/shrub habitat values to songbirds, as observed from field visits. Monitoring and management of invasive plants will be accomplished by implementing the following measures.

3. Monitoring and Management of Invasive Species

Monitoring for the presence or spread of invasive species are proposed for **three (3) years** with a letter report submitted to the client in order to have a licensed landscape contractor perform the management measures. Any area which is treated should be re-examined over multiple growing seasons to ensure the control of the invasive species has been obtained. Those conducting the monitoring should look for all known and potential species noted in this plan during all monitoring inspections. If additional species are identified, supplemental control strategy information can be found from the sources listed in this report. See discussions for individual species above for specifics about the appropriate timing for treatments. "Tips" for recognizing certain species addressed in this plan are listed in the table below. (*Tips are not provided for all species*).



Season	"Tips for Observation"	Notes
Fall	Fruits of Bittersweet are easy to spot in the fall.	Use care in removing species which have gone to seed, so as to prevent spread of seeds to soil. Field mark or make notes of areas treated to be re-evaluated the following year.

4. Preventive Measures

During routine maintenance activities, practices can be adhered to that will decrease the chances of inadvertently spreading invasive species across the site. Practices include:

- Fill materials which are brought in for the landscaping activities should be certified to be weed-free.
- Any hay or straw which is used for the mulch shall be certified as sterile.
- Control mechanisms shall be employed over the three (3) year monitoring period.
- Following removal of invasive species, any plant material shall, to the extent practical, be disposed of off-site to avoid depositing any potential seeds in the project area. **Do not chip or mulch woody stems from invasive species.**
- Invasive plant material which has been removed shall not be placed in any compost piles/bins on or off site (particularly municipal compost sites) because of the potential for spreading seed sources.
- This proposed management Plan shall be reviewed and expanded, as necessary, to address new invasive species, should they establish in the project area, and as new control techniques are established.

5. Control

Unless otherwise noted above, the paragraphs below describe preferred treatment strategies for all of the invasive species currently known to exist on-site, or with the potential to colonize in the project area. Whenever practical, strategies which cause the least disturbance are preferred.



Note: *The use or application of any chemical treatments for the control of invasive species should be undertaken with caution and extreme care. Foliar application of herbicides can result in the eradication of desirable species through drift of the herbicides during spraying. Measures to avoid unintended application should be implemented such as spraying on non-windy days. Rodeo™ or other wetland-approved herbicides shall be used in areas near streams or watercourses. Always read and follow product specifications and precautions. Lastly, the application of chemical treatments should always be conducted by a licensed applicator in a manner consistent with State and Federal laws and regulations.*

- **Multiflora Rose**

Multiflora rose (*Rosa multiflora*) Multiflora rose is an extremely prolific shrub that forms dense, impenetrable thickets which crowd and shade out native species. Individual plants can produce up to 500,000 seeds per year, many of which germinate near the parent. Seeds remain viable in the soil for up to 20 years. Fruits are sought after by birds and mammals, which subsequently disperse the seeds. The shrubs are highly competitive for soil nutrients and can lower crop yields in adjacent fields.

Control Methods: The most effective control method for Multiflora rose is to prevent establishment by annually monitoring for and removing small plants. Repeated cutting and/or mowing over several consecutive years will reduce plant vigor and help prevent spread. However, herbicide use in combination with cutting may be more effective for larger plants.

Mechanical Control: Small, scattered plants can be removed with a shovel, weed wrench, or grubbing hoe. Be sure to remove the entire plant, including all roots, since new plants can sprout from root fragments. Root sprouts resemble seedlings but are attached to a lateral root and are nearly impossible to pull up. Large patches of plants can be mowed or cut three to six times a growing season for two to four years. Mowing will prevent seedling establishment and is particularly effective where grass cover is dense. Large plants can be top cut with hedge cutters, then mowed annually. Hand cutting large clumps is difficult and time consuming. As an alternative, heavy equipment like a bulldozer can be used to knock down clumps, but further control is necessary due to resprouting and seed germination on disturbed soil. In high quality natural areas, hand cutting is preferred to mowing or bulldozing to minimize habitat disturbance.

Chemical Control: Herbicides can be applied broad scale as a foliar spray, or to select individuals as cut stump treatments. Foliar sprays are highly effective but should be used only where contact with nearby native vegetation can be prevented.

- 1) **Foliar Spray:** This method can be used throughout the growing season, but results will not be fully seen until the following spring. Spray a 1-2% v/v solution of glyphosate (e.g., Roundup™ or Rodeo™) or a 0.5% v/v solution of glyphosate plus a surfactant. If plants are in or near wetlands, only Rodeo™ should be used. Glyphosate is a non-selective herbicide that will kill all vegetation. Managers should be cautious not to spray so heavily that herbicide drips off the leaves. Other foliar sprays found to be effective include water-soluble triclopyr (Garlon 3A™) and dicamba (Banvel™), both specific for broadleaf plants, and fosamine (Krenite™), a bud inhibitor for



woody species. Dicamba is most effective if used when plants are flowering. Fosamine is effective throughout the growing season.

- 2) **Cut-Stump-Treatment:** This method can be used throughout the growing season or during dormancy. Fall application is recommended since, at this time, plants are translocating nutrients to the roots. To ensure uptake of the herbicide before the plant seals off the cut, apply immediately after cutting, within 5-15 minutes. Use a solution of water-soluble triclopyr (Garlon 3A™) and apply with a hand-held sprayer.

Biological Control: Currently, there are no known biological control methods. A native pathogen which causes rose-rosette disease, and a seed-infesting wasp (European rose chalcid) are being investigated as potential control agents.

- **Asiatic Bittersweet**

Asiatic bittersweet (*Celastrus orbiculatus*) is a rapidly spreading deciduous vine that threatens all vegetation in open and forested areas. It overtops other species and forms dense stands that shade out native vegetation. Trees and shrubs can be strangled by twining stems that twist around and eventually constrict the flow of plant fluids. Trees can be girdled and weighed down by vines in the canopies, making them more susceptible to damage by wind, snow, and ice storms.

Control Methods: The most effective control method for Asiatic Bittersweet is to prevent establishment by annually monitoring for and removing small plants. Eradication of established plants is difficult due to the persistent seed bank in the soil. Larger plants are best controlled by cutting, combined with herbicide treatment.

Mechanical Control: Light infestations of a few small plants can be controlled by mowing or cutting vines and hand pulling roots. Weekly mowing can eradicate plants, but less frequent mowing (2-3 times per year) will only stimulate root suckering. Cutting and uprooting plants is best done before fruiting. Vines with fruits should be bagged and disposed of in the trash to prevent seed dispersal. Heavy infestations can be controlled by cutting vines and immediately treating cut stems with herbicide. Cutting vines without removing or killing the roots will stimulate vigorous re-growth resulting in larger patches.

Chemical Control: Herbicides can be applied broad scale as a foliar spray, or to select individuals as cut stump treatments.

1. **Foliar Spray:** This method is most effective for low, dense patches. Early in the growing season, cut all vegetation to ground level and allow to re-grow. One month later, spray the area with a 1-2% solution of water-soluble triclopyr (Garlon 3A™) using a backpack sprayer. Triclopyr is suggested over glyphosate since it does not kill monocots (e.g., grasses, sedges, lilies), which remain and keep the soil from being exposed. Triclopyr is the active ingredient, in relatively dilute form, in Ortho's Brush-B-Gone™, which is not a restricted chemical and can be used as an alternative to Garlon 3A™.



2. **Cut-Stump-Treatment:** This method is most effective for tall patches. Care should be taken to cut and treat only bittersweet vines and not native plants, since these will be needed to re-vegetate the area. In late summer, cut vines and apply a systemic herbicide like triclopyr (Garlon 3A™) or glyphosate (Roundup™) to the cut. To ensure uptake of the herbicide before the plant seals off the cut, apply immediately after cutting, within 5-15 minutes. Apply with a sponge or paint brush. Any vines left hanging in the trees will decompose and fall within two to three years.

Biological Control: Currently, there are no known biological control methods.

Please feel free to contact me with any questions or comments at 860-807-4388 or at me email below.

Sincerely,

Vanasse Hangen Brustlin, Inc.

A handwritten signature in black ink, appearing to read "J. Shamas", with a stylized flourish at the end.

Jeffrey R. Shamas, CSS, PWS, CE

Director of Environmental Services
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