



EIGHT POINT WIND ENERGY CENTER INVASIVE SPECIES CONTROL PLAN

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**Eight Point Wind Energy Center
Invasive Species Control Plan
For Construction Activities and Post Construction Monitoring**

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ATTACHMENTS

Attachment A. New York State Prohibited and Regulated Invasive Plants, September 10, 2014

1.0 Introduction

Eight Point Wind, LLC is planning to construct up to 31 wind turbines with a maximum generating capability of 101.8 megawatts (MW) of power on land purchased or leased from owners of private property located in the Towns of Greenwood and West Union in Steuben County, New York. The Eight Point Wind Energy Center (the Project) facilities will include commercial-scale wind turbines, access roads, buried and overhead electric collection lines, a collection substation, meteorological towers, an operation and maintenance (O&M) building, and electrical interconnection facilities.

The Project Area is generally rectangular, encompassing a total of approximately 15,295 acres of land. The Project Area consists of rolling hills and is a patchwork of forests, successional shrubland, open fields and wetland communities. Construction activities will result in vegetation clearing and soil disturbance in the immediate vicinity of the proposed towers, access roads, electrical collection lines, collection substation, O&M building, and associated infrastructure.

Invasive vegetative species are a concern because they are not native to the area and their spread is likely to cause some degree of environmental, human health, or economic harm. Additionally, invasive insect species can alter ecosystems and destroy native vegetation. For example, invasive species will often out-compete native species because they may lack control mechanisms that are present in their native habitats. The result can be rapid spread which can alter ecological communities and diminish biological diversity. Normal dispersal methods for invasive plant species include wind, water, and wildlife; however, anthropogenic means of spread (e.g., construction activity) are of particular interest in this Invasive Species Control Plan (ISCP) for plants. Because invasive plant species will readily spread in disturbed areas, construction activities related to the Project have the potential to accelerate their distribution and are the primary focus of this ISCP.

1.1 Goals and Objectives

The intention of the ISCP is to outline a clear plan to minimize the spread of invasive species that are present on the Project Area. To prevent their spread within the Project Area, it is necessary to identify the existing invasive species and develop a plan to monitor and control them during construction. The goal of the ISCP is to maintain a zero percent increase in invasive species distribution and coverage within the Project Area.

Invasive species are regulated by the New York State Department of Environmental Conservation (NYSDEC) pursuant to Environmental Conservation Law Sections 9-1709 and 71-0703. Regulations under Part 575 of 6 NYCRR restrict the sale, purchase, possession, propagation, introduction, importation, and transport of invasive species. This ISCP is being developed in accordance with this regulation, to prevent the introduction of new, and spread of existing, invasive species within the Project Area.

2.0 Priority Invasive Plant Species within Region

The Project Area is located within the Finger Lakes Partnership for Regional Invasive Species Management (PRISM). There are eight PRISMs within New York State, each of which is made up of resource managers, non-governmental organizations, industry, resource users, citizens and other state agencies and stakeholders (NYSDEC, 2017a). The PRISMs were enacted under Title 17, Environmental Conservation Law (ECL) 9-1705(5)(g). The Finger Lakes PRISM separates priority species, which are highly invasive species either within the region or approaching the region, into three Working Groups (WGs): the Aquatic Working Group (AWG), the Terrestrial Working Group (TWG) and the Agricultural Working Group (AgWG)(FL-PRISM, 2017a).

The Finger Lakes PRISM identifies the following terrestrial plants as priority invasives within the TWG:

- Giant hogweed (*Heracleum mantegazzianum*)
- Japanese knotweed (*Polygonum cuspidatum*)
- Oriental bittersweet (*Celastrus orbiculatus*)
- Swallow-wort (pale and black) (*Cynanchum louisae*; *C. rossicum*)

The following species are considered high priority early detection invasive species within the TWG:

- Japanese stiltgrass (*Microstegium vimineum*)
- Mile-a-minute (*Persicaria perfoliata*)
- Slender falsebrome (*Brachypodium sylvaticum*)

As the Project Area also contains agricultural land that will be impacted as part of the Project, Eight Point Wind, LLC also reviewed priority invasives of concern within the AgWG:

- Autumn and Russian olive (*Elaeagnus umbellata* and *E. angustifolia*)
- Canada thistle (*Cirsium arvense*)
- Field bindweed (*Convolvulus arvensis*)
- Japanese knotweed (*Polygonum cuspidatum*)
- Johnson grass (*Sorghum halepense*)
- Ragweed (*Ambrosia* spp.)
- Spotted knapweed (*Centaurea stoebe*)
- Swallow-wort (*Cynanchum* spp.)
- Velvet leaf (*Abutilon theophrasti*)
- Wild parsnip (*Pastinaca sativa*)

2.1 Invasive Plant Species Identified within Project Area

As part of the wetland delineation field efforts performed for the Eight Point Wind Energy Center in the fall of 2016, and spring/summer of 2017, TRC biologists documented observed occurrences of invasive species within the Project Area. As part of the field efforts, TRC identified 12 invasive vegetative species which are listed as prohibited on the *Prohibited and Regulated Invasive Plants* list published by the NYSDEC on September 10, 2014 (see Attachment A). Inclusion on the prohibited list means that they cannot be possessed, sold, imported, purchased, transported or introduced and therefore, construction activities which would knowingly cause distribution of these species is prohibited. The following invasive plant species were identified in low densities throughout the Project Area:

- Amur honeysuckle (*Lonicera maackii*)
- Black locust (*Robina pseudoacacia*)
- Canada thistle (*Cirsium arvense*)
- Common buckthorn (*Rhmanus cathartica*)
- Common reed (*Phragmites australis*)
- Cut-leaf teasel (*Dipsacus laciniatus*)
- Garlic mustard (*Alliaria petiolata*)
- Morrow's honeysuckle (*Lonicera morrowii*)
- Multiflora rose (*Rosa multiflora*)
- Purple loosestrife (*Lythrum salicaria*)
- Reed manna grass (*Glyceria maxima*)
- Smooth buckthorn (*Rhamnus frangula*)

Only one of the invasive species identified within the Project Area is also listed as a priority invasive according to the Finger Lakes PRISM: Canada thistle (*Cirsium arvense*). This species is discussed in further detail below.

2.2 Canada Thistle (*Cirsium arvense*)

This species is listed as priority in AgWG) within the Finger Lakes PRISM, and is an aggressive herb which colonizes pastures, agricultural fields and natural areas (NYIS, 2017b). Seedlings of this species emerge in the mid to late spring, and are able to regenerate from root tissue in as early as 7 to 8 weeks. Seeds are dispersed through the wind and can survive for up to 20 years in the soil (NYIS, 2017).

The mature Canada thistle plant is a broadleaved weed, growing 2 to 5 feet in height. The spine of this plant is hairy, with dark green, irregularly shaped leaves with spines at the tips (FL-PRISM, 2017b). Flowers are pink to purple, which occur at the apex of the stems in clusters, surrounded by spineless bracts (NYIS, 2017). Due to the unpalatable nature of this plant, it is not typically consumed by wildlife or livestock, allowing it to continue to spread largely uninterrupted.

Canada thistle is an aggressive competitor and often outcompetes native species for access to light, nutrients, and moisture (NYIS, 2017b). Once established, this species can spread rapidly and will often displace native grasses and forbs.

Mechanical control of Canada thistle, including cutting, plowing, and cultivating, is the most effective means of control for this species; however, mechanical control must be repeated in order to weaken the root systems to prevent future spread (NYIS, 2017b; FL-PRISM, 2017b). To be effective, mowing must be repeated at least twice a year, primarily once in early June when the plant is flowering and root reserves are the lowest (NYIS, 2017b).



Photo 1 Flowering Canada thistle (FL-PRISM, 2017b).

If mechanical control is not a feasible option to control Canada thistle, which can be the case in large infestations, herbicides are another option. Glyphosate is a broadleaf herbicide which can be used to control this species. It is best suited for use in the early spring before the plants have begun to flower (NYIS, 2017b).

Within the Project Site, Canada thistle was primarily identified in old field habitat, as well as along the edges of roadways. As this species can propagate from fragments of roots and leaves in the soil, it is important to ensure that propagule and seeds are not transmitted within and out of the Project Area.

2.3 Common reed (*Phragmites australis*)

Although not listed by the Finger Lakes PRISM as a priority invasive, non-native common reed (*Phragmites australis*) is a widespread invasive which can colonize both upland (primarily roadside ditches and disturbed areas), swales and wetland communities and can be difficult to control.

Common reed is an herbaceous, perennial plant reaching heights of greater than 15 feet with thick root growth include rhizomes that can spread farther than 10 feet wide and several feet deep in one growing season (NYIS, 2017c). This species can sprout from rhizome fragments, making management particularly difficult, and can overtake hundreds of acres while displacing critical wetland species and forming a dense monoculture (FL-PRISM, 2017c).



Photo 2. Stand of common reed (FL-PRISM, 2017c).

In order to control non-native common reed, repeated mowing is a common practice. However, this mechanical control generally only produces short-term results due to the extensive root networks which re-sprout. Additionally, removing the root system can leave behind fragments of roots or rhizomes which will continue to sprout (NYIS, 2017c). If large root systems of common reed are removed, this also leads to depleted nutrient systems in the soil and an increased chance for erosion and detrimental effects to often sensitive (i.e., wetland)

habitats. It is important to have a restoration plan in place to stabilize soils and reintroduce nutrients if common reed is to be removed mechanically.

Herbicides may be applied, however, these are most useful on new colonies of common reed and should be applied after the plant has flowered (late summer or early fall; NYIS, 2017c). Multiple years of application may be required to reduce the viability of the plant and eradicate it from an area.

3.0 Invasive Insect Species in Vicinity of the Project Area

As previously mentioned, TRC biologists documented observed occurrences of invasive species within the Project Area during wetland delineation field efforts. No invasive insect species, or signs of infestation, were observed as part of this field effort; however, one insect species, the emerald ash borer (*Agrilus planipennis*) is also listed as a Priority Invasive of Concern within the TWG (FL-PRISM, 2017a). Additional information regarding this species is presented below.

3.1 Emerald Ash Borer (*Agrilus planipennis*)

The emerald ash borer (EAB) (*Agrilus planipennis*) is an invasive beetle, native to Asia, which was first identified in the United States in 2002 in Michigan. In New York, the EAB was first identified in Cattaraugus County in 2009, and has now spread to more than 30 counties, including Steuben County (NYSDEC, 2017b). This insect infects ash (*Fraxinus* sp.) trees and causes tree canopy dieback, yellowing and browning of leaves, leading to death of infected trees within two to four years (NYSDEC, 2017b).

The EAB has a one year life cycle and four stages of life: adult, egg, larva and pupa. The EAB emerges from beneath the bark tree of ash species beginnings in late-May or early-June (NYIS, 2017d), with the adult flight season complete by early August. The adult life span is approximately three weeks and the adults are most active during the day in sunny, warm weather. In wet or cooler weather, adult EAB shelter beneath the bark of ash trees (NYIS, 2017d).



Photo 3. Emerald ash borer adult (NYSDEC, 2017b).

New York State has implemented programs to help with early detection of EAB to prevent the spread, and all of Steuben County is included in the May 2017 Restricted Zone for the EAB. Restricted Zones include quarantines around known EAB infestations. Within these zones, regulated articles may not be removed from the zone without a compliance agreement or permit from the New York State Department of Agriculture and Markets (NYSDAM). These permits are applicable only during the non-flight season of the EAB, which is between September 1 and April 30 (NYSDEC, 2017b). Regulated articles include ash wood, ash logs, ash firewood (untreated), ash nursery stock, and wood chips (only between April 15 and May 15). Additionally, in accordance with 6 NYCRR Part 575 (Prohibited and Regulated Invasive Species), the EAB itself may not be moved in any life stage, unless for management, control, identification or disposal (NYSDEC, 2017b).

The Project will comply with the Restricted Zone requirements, and will contact the NYSDEC's Firewood and Invasive Insects Hotline at (866) 640-0652 if a suspected infestation or sighting is identified as part of the Project. Additionally, the Project will not transport ash products offsite.

4.0 Control Measures

To prevent introduction and spread of the listed species, management actions can be grouped into four main categories including: material inspection, targeted species treatment and removal, sanitation, and restoration. Within each category, specific actions or combinations thereof can be taken depending on characteristics of a particular species and its density within the target area.

1. **Material Inspection:** Material inspection includes the use of products such as seed, mulch, topsoil, fill, sand, and stone that are free of invasive species. Movement of these materials both into and out of the Project Area should be limited to minimize the possibility of spreading invasive species. Importation of these materials should be limited by reusing excavated products to the maximum extent practicable. Imported construction materials should be obtained from reputable sources and thoroughly inspected for the presence of invasive species prior to transportation or use on the site. Materials should be used immediately to limit the amount of time they are stockpiled.
2. **Targeted Species Treatment and Removal:** Targeted removal is used in instances where invasive species are encountered during construction and cannot be avoided. Removal in that instance would prevent spread of the species to other areas of the Project Area. Targeted removal includes options such as hand-pulling, burning, cutting, burying, excavating, or herbicide application which will either kill, or limit the ability of a species to propagate. Herbicide application shall be carried out in accordance with Part 325 of 6 NYCRR, Application of Pesticides. Removal methods will be determined based on the species and density of the encountered invasive. Invasive species that are removed should be either, left in the infested area, or placed in a secure container for proper disposal offsite.
3. **Sanitation:** As it relates to invasive species control, sanitation includes the cleaning of clothing and equipment prior to movement or use on the Project Site. Seeds and viable plant parts can easily be transported to different locations on clothing and equipment. When working in an area known to have invasive species present, washing stations should be established to thoroughly clean machinery and clothing. It is important to note that cleaning should be conducted both prior to equipment arriving on site and prior to it leaving, to prevent the spread of invasive species onto and off the Facility Site.
4. **Restoration:** Once construction is complete, the area should be regraded and stabilized as quickly as possible. Invasive species spread most readily in disturbed soil, and stabilizing the site quickly will limit the amount of time that invasive species have to get established in a particular area. Once the site is regraded, native seed mixes should be applied along with seed free mulch to reestablish vegetative cover. The seed mix should include a combination of forbs, warm and cool season grasses as well as cover crop species. The specific seed mix will not be known until additional consultation occurs with the landowners and local agency representatives, but ultimately the seed mix will contain only native species commonly found within the Project Area. Best management practices (BMPs) should also be implemented in accordance with the Stormwater Pollution Prevention Plan to prevent erosion and limit the potential for spread of invasive species bearing soil offsite.

5.0 Monitoring

Prior to the start of construction, crews should be educated regarding the contents of the ISCP to ensure that their activities on site comply with the BMPs outlined in it. Monitoring should be conducted throughout the duration of the Project to ensure that the ISCP is being implemented appropriately and that the goals outlined in it are being met. It is important to note that invasive species identified on site prior to construction are likely to spread even in the absence of further human intervention. It is therefore necessary to distinguish between natural movement of invasive species and anthropogenic movement caused by Project related construction activities. The ISCP goal of a zero net increase in the number of invasive species present and their distribution in the Project Area is based on the latter.

Post construction monitoring will be conducted for a period of two years following completion of Project related activities on site. This is to ensure that ISCP goals are met, as germination and spread of invasive species can continue long after construction activities have concluded. Movement of invasive species, as identified by visual inspection of a qualified biologist, will be treated in accordance with the control measures listed above, as deemed appropriate based on the characteristics of the invasive species. A final report will be prepared detailing the success of the ISCP. Failure to meet the goals of the ISCP will result in revision of the control plan and extension of the post construction monitoring phase for a period of two years from implementation of the revised plan.

6.0 References

Finger Lakes Partnership for Regional Invasive Species Management (FL-PRISM). 2017a. Terrestrial Invasives. Retrieved April 2017 from http://fingerlakesinvasives.org/species_environments/terrestrial/

FL-PRISM. 2017b. Canada thistle. Accessed October 2017.
http://fingerlakesinvasives.org/invasive_species/canada-thistle/

FL-PRISM. 2017c. Common reed grass. Accessed October 2017.
http://fingerlakesinvasives.org/invasive_species/common-reed-grass/

New York Invasive Species Information (NYIS). 2017. 6 NYCRR Park 575 Prohibited and Regulated Invasive Species. Retrieved April 2017 from http://www.nyis.info/?action=nycrr_575

NYIS. 2017b. Canada thistle [DRAFT](*Cirsium arvense*). Accessed October 2017.
http://www.nyis.info/index.php?action=invasive_detail&id=62

NYIS. 2017c. Common Reed (*Phragmites australis* [Cav.] Trin. Ex Steud.). Accessed October 2017.
http://www.nyis.info/index.php?action=invasive_detail&id=42

NYIS. 2017d. Emerald ash borer (*Agrilus planipennis*). Accessed November 2017.
<http://www.nyis.info/index.php?action=eab>

New York State Department of Environmental Conservation (NYSDEC). 2017a. Partnerships for Regional Invasive Species Management (PRISM). Accessed October 2017.
<http://www.dec.ny.gov/animals/47433.html>

NYSDEC. 2017b. Emerald ash borer (EAB). Accessed November 2017.
<http://www.dec.ny.gov/animals/7253.html>

ATTACHMENT A

New York State Prohibited and Regulated Invasive Plants September 10, 2014

New York State Prohibited and Regulated Invasive Plants

September 10, 2014



NYS DEPARTMENT OF
ENVIRONMENTAL CONSERVATION



NYS DEPARTMENT OF
AGRICULTURE AND MARKETS

New York State Department of Environmental Conservation
NYCRR Part 575 Invasive Species Regulations
Questions and Answers

<http://www.dec.ny.gov/regulations/2359.html>

What are invasive species?

Invasive species means a species that is nonnative to a particular ecosystem, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

Why are invasive species a problem?

Invasive species can harm natural communities and systems (plants and animals found in particular physical environments) by out-competing native species, reducing biological diversity, altering community structure and, in some cases, changing ecosystems. Invasive species threaten New York's food supply, not only agriculture but also harvested wildlife, fish and shellfish; our landscaping, parks, gardens, and pets; and our recreation resources and even animal and human health. All New Yorkers have a stake in the invasive species issue.

How will these regulations help?

These regulations are to help control invasive species by reducing the introduction and spread of them by limiting commerce in such species. By preventing introduction of new invasive species, New York will save time, effort, and money in the future.

How were the lists included in the regulations developed?

The lists of prohibited and regulated species were developed using the species assessment and listing process outlined in the 2010 report "A Regulatory System for Non-native Species," which can be found at <http://www.dec.ny.gov/animals/63402.html>.

When will the regulations be implemented?

The final regulations (or a summary) were published in the State Register September 10, 2014, they become effective 6 months thereafter.

What is the difference between prohibited and regulated invasive species?

Prohibited invasive species cannot be knowingly possessed with the intent to sell, import, purchase, transport or introduce. In addition, no person shall sell, import, purchase, transport, introduce or propagate prohibited invasive species. Regulated invasive species, on the other hand, are species which cannot be knowingly introduced into a free-living state, or introduced by a means that one should have known would lead to such an introduction, although such species shall be legal to possess, sell, buy, propagate and transport.

What species have grace periods established in the regulations?

A one-year grace period is included in the regulations for Japanese Barberry (*Berberis thunbergii*), during which existing stock of this species may be sold.

Who will enforce the regulations?

The regulations will be enforced by the Department of Environmental Conservation, with assistance from the Department of Agriculture and Markets.

TERRESTRIAL PLANTS

PROHIBITED



Amur Cork Tree *Phellodendron amurense*

PROHIBITED



Amur Honeysuckle *Lonicera maackii*

PROHIBITED



Autumn Olive *Elaeagnus umbellata*

PROHIBITED



Beach Vitex *Vitex rotundifolia*

PROHIBITED



Black Swallow-wort *Cynanchum louiseae*
(*C. nigrum*, *Vincetoxicum nigrum*)

PROHIBITED



Bohemian Knotweed *Reynoutria x bohemica*
(*Fallopia x bohemica*, *Polygonum x bohemica*)

PROHIBITED



Border Privet *Ligustrum obtusifolium*

PROHIBITED



Broad-leaved Pepper-grass
Lepidium latifolium

PROHIBITED



Canada Thistle *Cirsium arvense*
(*C. setosum*, *C. incanum*, *Serratula arvensis*)

TERRESTRIAL PLANTS

PROHIBITED



Chinese Lespedeza *Lespedeza cuneata*

PROHIBITED



Chinese Yam *Dioscorea polystachya (D. batatas)*

PROHIBITED



Cogon Grass *Imperata cylindrica*
(*I. arundinacea*, *Lagurus cylindricus*)

PROHIBITED



Common Buckthorn *Rhamnus cathartica*

PROHIBITED



Cup-plant *Silphium perfoliatum*

PROHIBITED



Cut-leaf Teasel *Dipsacus laciniatus*

PROHIBITED



Cypress Spurge *Euphorbia cyparissias*

PROHIBITED



Fly Honeysuckle *Lonicera x bella*

PROHIBITED



Garden Loosestrife *Lysimachia vulgaris*

TERRESTRIAL PLANTS

PROHIBITED



Garlic Mustard *Alliaria petiolata*

PROHIBITED



Giant Hogweed *Heracleum mantegazzianum*

PROHIBITED



Giant Knotweed *Reynoutria sachalinensis*
(*Fallopia sachalinensis*, *Polygonum sachalinensis*)

PROHIBITED



Golden Bamboo *Phyllostachys aurea*

PROHIBITED



Gray Florist's Willow *Salix atrocinerea*

PROHIBITED



Japanese Angelica Tree *Aralia elata*

PROHIBITED



Japanese Barberry *Berberis thunbergii*

PROHIBITED



Japanese Chaff Flower *Achyranthes japonica*

PROHIBITED



Japanese Honeysuckle *Lonicera japonica*

TERRESTRIAL PLANTS

PROHIBITED



Japanese Hops *Humulus japonicus*

PROHIBITED



Japanese Knotweed *Reynoutria japonica*
(*Fallopia japonica*, *Polygonum cuspidatum*)

PROHIBITED



Japanese Stilt Grass *Microstegium vimineum*

PROHIBITED



Kudzu *Pueraria montana*

PROHIBITED



Leafy Spurge *Euphorbia esula*

PROHIBITED



Lesser Celandine *Ficaria verna*
(*Ranunculus ficaria*)

PROHIBITED



Mile-a-minute Weed *Persicaria perfoliata*
(*Polygonum perfoliatum*)

PROHIBITED



Morrow's Honeysuckle *Lonicera morrowii*

PROHIBITED



Mugwort *Artemisia vulgaris*

TERRESTRIAL PLANTS

PROHIBITED



Multiflora Rose *Rosa multiflora*

PROHIBITED



Narrowleaf Bittercress *Cardamine impatiens*

PROHIBITED



Oriental Bittersweet *Celastrus orbiculatus*

PROHIBITED



Pale Swallow-wort *Cynanchum rossicum*
(*C. medium*, *Vincetoxicum medium*, *V. rossicum*)

PROHIBITED



Porcelain Berry *Ampelopsis brevipedunculata*

PROHIBITED



Slender False Brome
Brachypodium sylvaticum

PROHIBITED



Small Carpetgrass *Arthraxon hispidus*

PROHIBITED



Spotted Knapweed *Centaurea stoebe*
(*C. biebersteinii*, *C. diffusa*, *C. maculosa* misapplied,
C. xpsammogena)

PROHIBITED



Sycamore Maple *Acer pseudoplatanus*

TERRESTRIAL PLANTS

PROHIBITED



Tartarian Honeysuckle *Lonicera tatarica*

PROHIBITED



Wavyleaf Basketgrass *Oplismenus hirtellus*

PROHIBITED



Wild Chervil *Anthriscus sylvestris*

PROHIBITED



Wineberry *Rubus phoenicolasius*

PROHIBITED



Yellow Groove Bamboo
Phyllostachys aureosulcata

TERRESTRIAL PLANTS

REGULATED



Black Locust *Robinia pseudoacacia*

REGULATED



Burning Bush *Euonymus alatus*

REGULATED



Chinese Silver Grass *Miscanthus sinensis*

REGULATED



Japanese Virgin's Bower
Clematis terniflora

REGULATED



Norway Maple *Acer platanoides*

REGULATED



Winter Creeper *Euonymus fortunei*

WETLAND PLANTS

PROHIBITED



Common Reed Grass *Phragmites australis*

PROHIBITED



Marsh Dewflower *Murdannia keisak*

PROHIBITED



Purple Loosestrife *Lythrum salicaria*

PROHIBITED



Reed Manna Grass *Glyceria maxima*

PROHIBITED



Smooth Buckthorn *Frangula alnus*
(*Rhamnus frangula*)

PROHIBITED



Yellow Iris *Iris pseudacorus*

AQUATIC PLANTS

PROHIBITED



Brazilian Waterweed *Egeria densa*

PROHIBITED



Broadleaf Water-milfoil Hybrid
Myriophyllum heterophyllum x M. laxum

PROHIBITED



Curly Pondweed *Potamogeton crispus*

PROHIBITED



Eurasian Water-milfoil
Myriophyllum spicatum

PROHIBITED



Fanwort *Cabomba caroliniana*

PROHIBITED



Floating Primrose Willow
Ludwigia peploides

PROHIBITED



Frogbit *Hydrocharis morsus-ranae*

PROHIBITED



Hydrilla/Water Thyme *Hydrilla verticillata*

PROHIBITED



Parrot-feather *Myriophyllum aquaticum*

AQUATIC PLANTS

PROHIBITED



Uruguayan Primrose Willow
Ludwigia hexapetala (*L. grandiflora*)

PROHIBITED



Water Chestnut *Trapa natans*

PROHIBITED



Yellow Floating Heart *Nymphoides peltata*

Photo Credits

TERRESTRIAL PLANTS, PROHIBITED: **Amur Cork Tree:** large photo and inset - Patrick Breen, Oregon State University, Bugwood.org; **Amur Honeysuckle:** large photo - John M. Randall, The Nature Conservancy, Bugwood.org, inset - Chuck Barger, University of Georgia, Bugwood.org; **Autumn Olive:** James R. Allison, Georgia Department of Natural Resources, Bugwood.org; **Beach Vitex:** Forest and Kim Starr, Starr Environmental, Bugwood.org; **Black Swallow-wort:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Bohemian Knotweed:** Robert Vidéki, Doronicum Kft., Bugwood.org; **Border Privet:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Broad-leaved Pepper-grass:** Steve Dewey, Utah State University, Bugwood.org; **Canada Thistle:** Steve Dewey, Utah State University, Bugwood.org; **Chinese Lespedeza:** James H. Miller, USDA Forest Service, Bugwood.org; **Chinese Yam:** Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; **Cogon Grass:** Nancy Loewenstein, Auburn University, Bugwood.org; **Common Buckthorn:** large photo - Chris Evans, Illinois Wildlife Action Plan, Bugwood.org, inset - Paul Wray, Iowa State University, Bugwood.org; **Cup-plant:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Cut-leaf Teasel:** Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; **Cypress Spurge:** Todd Pfeiffer, Klamath County Weed Control, Bugwood.org; **Fly Honeysuckle:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Garden Loosetrife:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Garlic Mustard:** Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; **Giant Hogweed:** large photo - Thomas B. Denholm, New Jersey Department of Agriculture, www.forestryimages.org, top inset - Terry English, USDA APHIS PPQ, www.forestryimages.org, bottom inset - Randy Westbrook, U.S. Geological Survey, www.forestryimages.org; **Giant Knotweed:** Jan Samanek, State Phytosanitary Administration, Bugwood.org; **Golden Bamboo:** James R. Allison, Georgia Department of Natural Resources, Bugwood.org; **Gray Florist's Willow:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Japanese Angelica Tree:** large photo - T. Davis Sydnor, The Ohio State University, Bugwood.org, inset - John M. Randall, The Nature Conservancy, Bugwood.org; **Japanese Barberry:** large photo and inset - John Ruter, University of Georgia, Bugwood.org; **Japanese Chaff Flower:** Chris Evans, Illinois Wildlife Action Plan, Bugwood.org; **Japanese Honeysuckle:** large photo and inset - Chuck Barger, University of Georgia, Bugwood.org; **Japanese Hops:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Japanese Knotweed:** Tom Heutte, USDA Forest Service, Bugwood.org; **Japanese Stilt Grass:** Chuck Barger, University of Georgia, Bugwood.org; **Kudzu:** large photo - James H. Miller, USDA Forest Service, Bugwood.org, top inset - Forest and Kim Starr, Starr Environmental, Bugwood.org, bottom inset - James H. Miller, USDA Forest Service, Bugwood.org; **Leafy Spurge:** Norman E. Rees, USDA Agricultural Research Service - Retired, Bugwood.org; **Lesser Celandine:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Minute Weed:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Morrow's Honeysuckle:** large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - Stacey Leicht, University of Connecticut, Bugwood.org; **Mugwort:** large photo - Christian Fischer, WikimediaCommons.org, inset - Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org; **Multiflora Rose:** James R. Allison, Georgia Department of Natural Resources, Bugwood.org; **Narrowleaf Bittercress:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Oriental Bittersweet:** large photo - James H. Miller, USDA Forest Service, Bugwood.org, inset - James R. Allison, Georgia Department of Natural Resources, Bugwood.org; **Pale Swallow-wort:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Porcelain Berry:** James H. Miller, USDA Forest Service, Bugwood.org; **Slender False Brome:** Botanischer Garten, Frankfurt, Germany - Creative Commons Universal Public Domain; **Small Carpetgrass:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Spotted Knapweed:** Bruce Ackley, The Ohio State University, Bugwood.org; **Sycamore Maple:** large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - John Ruter, University of Georgia, Bugwood.org; **Tartarian Honeysuckle:** large photo - Patrick Breen, Oregon State University, Bugwood.org, inset - Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org; **Wavyleaf Basketgrass:** Kerrie L. Kyde, Maryland Department of Natural Resources, Bugwood.org; **Wild Chervil:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Wineberry:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Yellow Groove Bamboo:** Caryn Rickel, Institute of Invasive Bamboo Research, Bugwood.org

TERRESTRIAL PLANTS, REGULATED: **Black Locust:** large photo - Rob Routledge, Sault College, Bugwood.org, inset - Vern Wilkins, Indiana University, Bugwood.org; **Burning Bush:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Chinese Silver Grass:** James H. Miller, USDA Forest Service, Bugwood.org; **Japanese Virgin's Bower:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Norway Maple:** large photo - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org, inset - Rob Routledge, Sault College, Bugwood.org; **Winter Creeper:** James H. Miller, USDA Forest Service, Bugwood.org

WETLAND PLANTS, PROHIBITED: **Common Reed Grass:** Joseph M. DiTomaso, University of California - Davis, Bugwood.org; **Marsh Dewflower:** Linda Lee, University of South Carolina, Bugwood.org; **Purple Loosestrife:** John D. Byrd, Mississippi State University, Bugwood.org; **Reed Manna Grass:** large photo - WikimediaCommons.org, top and bottom insets - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Smooth Buckthorn:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Yellow Iris:** Nancy Loewenstein, Auburn University, Bugwood.org

AQUATIC PLANTS, PROHIBITED: **Brazilian Waterweed:** Robert Vidéki, Doronicum Kft., Bugwood.org; **Broadleaf Water-milfoil Hybrid:** Donald Cameron, geobotany.newenglandwild.org; **Curly Pondweed:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Eurasian Water-milfoil:** Alison Fox, University of Florida, www.forestryimages.org; **Fanwort:** large photo - Robert Vidéki, Doronicum Kft., Bugwood.org, inset - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Floating Primrose Willow:** John M. Randall, The Nature Conservancy, Bugwood.org; **Frogbit:** large photo - Mark Malchoff, Lake Champlain Sea Grant Program, inset - Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; **Hydrilla/Water Thyme:** Jon Rodgers, http://www.galvbayinvasives.org; **Parrot-feather:** John M. Randall, The Nature Conservancy, Bugwood.org; **Uruguayan Primrose Willow:** Karan A. Rawlins, University of Georgia, Bugwood.org; **Water Chestnut:** large photo - John M. Randall, The Nature Conservancy, Bugwood.org, inset - Steve Hurst, USDA NRCS PLANTS Database, Bugwood.org; **Yellow Floating Heart:** Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

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Amur Honeysuckle	<i>Lonicera maackii</i>	3	Mugwort	<i>Artemisia vulgaris</i>	6
Autumn Olive	<i>Elaeagnus umbellata</i>	3	Multiflora Rose	<i>Rosa multiflora</i>	7
Beach Vitex	<i>Vitex rotundifolia</i>	3	Narrowleaf Bittercress	<i>Cardamine impatiens</i>	7
Black Locust	<i>Robinia pseudoacacia</i>	9	Norway Maple	<i>Acer platanoides</i>	9
Black Swallow-wort	<i>Cynanchum louiseae</i> (<i>C. nigrum</i> , <i>Vincetoxicum nigrum</i>)	3	Oriental Bittersweet	<i>Celastrus orbiculatus</i>	7
Bohemian Knotweed	<i>Reynoutria x bohemica</i> (<i>Fallopia x bohemica</i> , <i>Polygonum x bohemica</i>)	3	Pale Swallow-wort	<i>Cynanchum rossicum</i> (<i>C. medium</i> , <i>Vincetoxicum medium</i> , <i>V. rossicum</i>)	7
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Cup-plant	<i>Silphium perfoliatum</i>	4	Winter Creeper	<i>Euonymus fortunei</i>	9
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Giant Knotweed	<i>Reynoutria sachalinensis</i> (<i>Fallopia sachalinensis</i> , <i>Polygonum sachalinensis</i>)	5	Reed Manna Grass	<i>Glyceria maxima</i>	10
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Japanese Barberry	<i>Berberis thunbergii</i>	5	AQUATIC PLANTS		
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Japanese Hops	<i>Humulus japonicus</i>	6	Curly Pondweed	<i>Potamogeton crispus</i>	11
Japanese Knotweed	<i>Reynoutria japonica</i> (<i>Fallopia japonica</i> , <i>Polygonum cuspidatum</i>)	6	Eurasian Water-milfoil	<i>Myriophyllum spicatum</i>	11
Japanese Stilt Grass	<i>Microstegium vimineum</i>	6	Fanwort	<i>Cabomba caroliniana</i>	11
Japanese Virgin's Bower	<i>Clematis terniflora</i>	9	Floating Primrose Willow	<i>Ludwigia peploides</i>	11
Kudzu	<i>Pueraria montana</i>	6	Frogbit	<i>Hydrocharis morsus-ranae</i>	11
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<i>Alliaria petiolata</i>	Garlic Mustard	5	<i>Oplismenus hirtellus</i>	Wavyleaf Basketgrass	8
<i>Ampelopsis brevipedunculata</i>	Porcelain Berry	7	<i>Persicaria perfoliata</i>	Mile-a-minute Weed	6
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<i>Brachypodium sylvaticum</i>	Slender False Brome	7	<i>Reynoutria japonica</i>	Japanese Knotweed	6
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<i>Centaurea stoebe</i>	Spotted Knapweed	7	<i>Reynoutria sachalinensis</i>	Giant Knotweed	5
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<i>Euphorbia cyparissias</i>	Cypress Spurge	4	<i>Murdannia keisak</i>	Marsh Dewflower	10
<i>Euphorbia esula</i>	Leafy Spurge	6	<i>Phragmites australis</i>	Common Reed Grass	10
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(<i>Ranunculus ficaria</i>)			AQUATIC PLANTS		
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