**NEW YORK**

**NON-NATIVE PLANT INVASIVENESS RANKING FORM**

Scientific name: Cynanchum louiseae (C. nigrum, Vincetoxicum nigrum)

USDA Plants Code: CYLO11

Common names: Black swallow-wort

Native distribution: Southwest Europe

Date assessed: April 7, 2009

Assessors: Steve Glenn, Gerry Moore

Reviewers: LIISMA SRC

Date Approved: April 15, 2009

Form version date: 3 March 2009

**New York Invasiveness Rank:** Very High (Relative Maximum Score >80.00)

### Distribution and Invasiveness Rank (Obtain from PRISM invasiveness ranking form)

<table>
<thead>
<tr>
<th>Status of this species in each PRISM:</th>
<th>Current Distribution</th>
<th>PRISM Invasiveness Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Adirondack Park Invasive Program</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>2 Capital/Mohawk</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>3 Catskill Regional Invasive Species Partnership</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>4 Finger Lakes</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>5 Long Island Invasive Species Management Area</td>
<td>Widespread</td>
<td>Very High</td>
</tr>
<tr>
<td>6 Lower Hudson</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>7 Saint Lawrence/Eastern Lake Ontario</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>8 Western New York</td>
<td>Not Assessed</td>
<td>Not Assessed</td>
</tr>
</tbody>
</table>

### Invasiveness Ranking Summary

(see details under appropriate sub-section)

<table>
<thead>
<tr>
<th>Ecological impact</th>
<th>Total (Total Answered*) Possible</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 (40)</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Biological characteristic and dispersal ability</td>
<td>25 (25)</td>
<td>24</td>
</tr>
<tr>
<td>Ecological amplitude and distribution</td>
<td>25 (25)</td>
<td>23</td>
</tr>
<tr>
<td>Difficulty of control</td>
<td>10 (7)</td>
<td>6</td>
</tr>
<tr>
<td>Outcome score</td>
<td>100 (97)(^b)</td>
<td>87(^a)</td>
</tr>
<tr>
<td>Relative maximum score (^†)</td>
<td></td>
<td>89.69</td>
</tr>
</tbody>
</table>

**New York Invasiveness Rank\(^§\)**

Very High (Relative Maximum Score >80.00)

* For questions answered “unknown” do not include point value in “Total Answered Points Possible.” If “Total Answered Points Possible” is less than 70.00 points, then the overall invasive rank should be listed as “Unknown.”

\(^†\)Calculated as 100(a/b) to two decimal places.

\(^§\)Very High >80.00; High 70.00–80.00; Moderate 50.00–69.99; Low 40.00–49.99; Insignificant <40.00

**A. DISTRIBUTION (KNOWN/POTENTIAL): Summarized from individual PRISM forms**

- **A1.1. Has this species been documented to persist without cultivation in NY? (reliable source; voucher not required)**
  - Yes – continue to A1.2
  - No – continue to A2.1

- **A1.2. In which PRISMs is it known (see inset map)?**
  - Adirondack Park Invasive Program
  - Capital/Mohawk
  - Catskill Regional Invasive Species Partnership
  - Finger Lakes
  - Long Island Invasive Species Management Area
  - Lower Hudson
  - Saint Lawrence/Eastern Lake Ontario
  - Western New York
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**Documentation:**
Sources of information:

A2.1. What is the likelihood that this species will occur and persist outside of cultivation, given the climate in the following PRISMs? (obtain from PRISM invasiveness ranking form)

<table>
<thead>
<tr>
<th>PRISM</th>
<th>Likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adirondack Park Invasive Program</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Capital/Mohawk</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Catskill Regional Invasive Species Partnership</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Finger Lakes</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Long Island Invasive Species Management Area</td>
<td>Very Likely</td>
</tr>
<tr>
<td>Lower Hudson</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Saint Lawrence/Eastern Lake Ontario</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Western New York</td>
<td>Not Assessed</td>
</tr>
</tbody>
</table>

**Documentation:**
Sources of information e.g.: distribution models, literature, expert opinions:
Already well established. First known infestation in New York was Long Island (1874). Sheeley & Raynal, 1996; Brooklyn Botanic Garden, 2009.

If the species does not occur and is not likely to occur with any of the PRISMs, then stop here as there is no need to assess the species.

A2.2. What is the current distribution of the species in each PRISM? (obtain rank from PRISM invasiveness ranking forms)

<table>
<thead>
<tr>
<th>PRISM</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adirondack Park Invasive Program</td>
<td>Not Assessed</td>
</tr>
<tr>
<td>Capital/Mohawk</td>
<td>Not Assessed</td>
</tr>
<tr>
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<tr>
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<td>Not Assessed</td>
</tr>
<tr>
<td>Western New York</td>
<td>Not Assessed</td>
</tr>
</tbody>
</table>

**Documentation:**
Sources of information:
Brooklyn Botanic Garden, 2009.

A2.3. Describe the potential or known suitable habitats within New York. Natural habitats include all habitats not under active human management. Managed habitats are indicated with an asterisk.

**Aquatic Habitats**
- Salt/brackish waters
- Freshwater tidal
- Rivers/streams
- Natural lakes and ponds
- Vernal pools
- Reservoirs/impoundments*
- Reservoirs/impoundments*  

**Wetland Habitats**
- Salt/brackish marshes
- Freshwater marshes
- Peatlands
- Shrub swamps
- Forested wetlands/riparian
- Ditches*
- Beaches and/or coastal dunes

**Upland Habitats**
- Cultivated*
- Grasslands/old fields
- Shrublands
- Forests/woodlands
- Alpine
- Roadsides*

Other potential or known suitable habitats within New York:
Urban pavement cracks, flood plain ravines, river banks; coastal shores.

**Documentation:**
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; Brooklyn Botanic Garden, 2009.
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B. INVASIVENESS RANKING
Questions apply to areas similar in climate and habitats to New York unless specified otherwise.

1. ECOLOGICAL IMPACT

1.1. Impact on Natural Ecosystem Processes and System-Wide Parameters (e.g. fire regime, geomorphological changes (erosion, sedimentation rates), hydrologic regime, nutrient and mineral dynamics, light availability, salinity, pH)

A. No perceivable impact on ecosystem processes based on research studies, or the absence of impact information if a species is widespread (>10 occurrences in minimally managed areas), has been well-studied (>10 reports/publications), and has been present in the northeast for >100 years.  

B. Influences ecosystem processes to a minor degree (e.g., has a perceivable but mild influence on soil nutrient availability)  

C. Significant alteration of ecosystem processes (e.g., increases sedimentation rates along streams or coastlines, reduces open water that are important to waterfowl)  

D. Major, possibly irreversible, alteration or disruption of ecosystem processes (e.g., the species alters geomorphology and/or hydrology, affects fire frequency, alters soil pH, or fixes substantial levels of nitrogen in the soil making soil unlikely to support certain native plants or more likely to favor non-native species)  

U. Unknown  

Score 7  

Documentation:
Identify ecosystem processes impacted (or if applicable, justify choosing answer A in the absence of impact information)  
Ecosystem scale modification appears obvious but full impacts have not yet known as studies are lacking. Large stands clearly cause a significant decrease in light availability. Latex of plant probably impacts soil chemistry but specific studies on this not known.  
Sources of information: Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; authors' pers. obs.  

1.2. Impact on Natural Community Structure

A. No perceived impact; establishes in an existing layer without influencing its structure  

B. Influences structure in one layer (e.g., changes the density of one layer)  

C. Significant impact in at least one layer (e.g., creation of a new layer or elimination of an existing layer)  

D. Major alteration of structure (e.g., covers canopy, eradicating most or all layers below)  

U. Unknown  

Score 7  

Documentation:
Identify type of impact or alteration:  
Large, monospecific stands can form in open, fully-exposed areas. In brushy areas, these vines can over-top and smother shrubs, forming the dominant cover and creating a new layer of vegetation. Under forested canopies, plants of shorter stature can comprise the dominant cover in the herbaceous understory layer.  
Sources of information: Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; authors' pers. obs.  

1.3. Impact on Natural Community Composition

A. No perceived impact; causes no apparent change in native populations  

B. Influences community composition (e.g., reduces the number of individuals in one or more native species in the community)  

Score 3  

Documentation:
Identify area of impact or alteration:  

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C. Significantly alters community composition (e.g., produces a significant reduction in the population size of one or more native species in the community) 7
D. Causes major alteration in community composition (e.g., results in the extirpation of one or several native species, reducing biodiversity or change the community composition towards species exotic to the natural community) 10
U. Unknown

Score 10

Documentation:
Identify type of impact or alteration:
Can form dense populations which displace and eliminate native plant spp., including rare plant species, such as those in Alvar grasslands in northern New York.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; authors' pers. obs.

1.4. Impact on other species or species groups (cumulative impact of this species on the animals, fungi, microbes, and other organisms in the community it invades. Examples include reduction in nesting/foraging sites; reduction in habitat connectivity; injurious components such as spines, thorns, burrs, toxins; suppresses soil/sediment microflora; interferes with native pollinators and/or pollination of a native species; hybridizes with a native species; hosts a non-native disease which impacts a native species)
A. Negligible perceived impact 0
B. Minor impact 3
C. Moderate impact 7
D. Severe impact on other species or species groups 10
U. Unknown

Score 10

Documentation:
Identify type of impact or alteration:
May adversely affect butterfly populations; Monarch's ovipost on swallow-worts (instead of milkweeds) but suffer higher mortality; also displacing native milkweeds and affecting food plant supply fr butterfly species that are dependent on these. Can act as an alternate host for rusts attacking Pinus species. Chemicals in latex probably affect compostition of the soil microbial community. Studies suggests a decline in arthropod, lichens, and grassland bird diversity. Toxic to grazing mammals.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Ernst & Cappuccino, 2005; Cordeiro, 2006.

Total Possible 40
Section One Total 34

2. BIOLOGICAL CHARACTERISTICS AND DISPERSAL ABILITY

2.1. Mode and rate of reproduction (provisional thresholds, more investigation needed)
A. No reproduction by seeds or vegetative propagules (i.e. plant sterile with no sexual or asexual reproduction). 0
B. Limited reproduction (fewer than 10 viable seeds per plant AND no vegetative reproduction; if viability is not known, then maximum seed production is less than 100 seeds per plant and no vegetative reproduction) 1
C. Moderate reproduction (fewer than 100 viable seeds per plant - if viability is not known, then maximum seed production is less than 1000 seeds per plant - OR limited successful vegetative spread documented) 2
D. Abundant reproduction with vegetative asexual spread documented as one of the plants prime reproductive means OR more than 100 viable seeds per plant (if viability is not 4
known, then maximum seed production reported to be greater than 1000 seeds per plant.)

U. Unknown

**Score 4**

**Documentation:**

Describe key reproductive characteristics (including seeds per plant):

Single vine can produce thousands of seeds. Seeds are adventitiously polyembryonic, the additional embryos being formed from other diploid cells beyond the zygote.

Sources of information:

Lawlor, 2001; Hotchkiss et al., 2008; authors' pers. obs.

### 2.2. Innate potential for long-distance dispersal (e.g. bird dispersal, sticks to animal hair, buoyant fruits, pappus for wind-dispersal)

A. Does not occur (no long-distance dispersal mechanisms)

B. Infrequent or inefficient long-distance dispersal (occurs occasionally despite lack of adaptations)

C. Moderate opportunities for long-distance dispersal (adaptations exist for long-distance dispersal, but studies report that 95% of seeds land within 100 meters of the parent plant)

D. Numerous opportunities for long-distance dispersal (adaptations exist for long-distance dispersal and evidence that many seeds disperse greater than 100 meters from the parent plant)

U. Unknown

**Score 4**

**Documentation:**

Identify dispersal mechanisms:

A large proportion of seeds remains close to the parent plant, but many small, satellite populations are often found far downwind of large seed source populations through wind dispersal (anemochory).

Sources of information:

Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

### 2.3. Potential to be spread by human activities (both directly and indirectly – possible mechanisms include: commercial sales, use as forage/revegetation, spread along highways, transport on boats, contaminated compost, land and vegetation management equipment such as mowers and excavators, etc.)

A. Does not occur

B. Low (human dispersal to new areas occurs almost exclusively by direct means and is infrequent or inefficient)

C. Moderate (human dispersal to new areas occurs by direct and indirect means to a moderate extent)

D. High (opportunities for human dispersal to new areas by direct and indirect means are numerous, frequent, and successful)

U. Unknown

**Score 2**

**Documentation:**

Identify dispersal mechanisms:

Human land management activities may contribute to dispersal, such as mowing. This species is listed as a cultivated ornamental in the United States, although currently not widely available.

Sources of information:

Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

### 2.4. Characteristics that increase competitive advantage, such as shade tolerance, ability to grow on infertile soils, perennial habit, fast growth, nitrogen fixation, allelopathy, etc.
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| A. Possesses no characteristics that increase competitive advantage | 0 |
| B. Possesses one characteristic that increases competitive advantage | 3 |
| C. Possesses two or more characteristics that increase competitive advantage | 6 |
| U. Unknown | Score 6 |

**Documentation:**
Evidence of competitive ability:
Perennial, allelopathic [plant extracts of C. rossicum were found to contain potent inhibitors of plant pathogenic fungi, diverse bacteria, and herbivorous insects (Mogg et al., 2008)], tolerant to a wide range of light intensities, and can tolerate a variety of soil conditions. Can self-pollinate and long-lived flowers enhance fruit set. Polyembryonic seeds can produce multiple seedlings (DiTommaso et al., 2005), although a recent study on C. rossicum (Hotchkiss et al., 2008) suggests that any fitness advantage provided by polyembryony may be habitat (light) dependent.

Sources of information:
Lumer & Yost, 1995; Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; Hotchkiss et al., 2008; Mogg et al., 2008.

2.5. Growth vigor
| A. Does not form thickets or have a climbing or smothering growth habit | 0 |
| B. Has climbing or smothering growth habit, forms a dense layer above shorter vegetation, forms dense thickets, or forms a dense floating mat in aquatic systems where it smothers other vegetation or organisms | 2 |
| U. Unknown | Score 2 |

**Documentation:**
Describe growth form:
This species can form dense stands that can smother the herbaceous layer and shrubs.

Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

2.6. Germination/Regeneration
| A. Requires open soil or water and disturbance for seed germination, or regeneration from vegetative propagules. | 0 |
| B. Can germinate/regenerate in vegetated areas but in a narrow range or in special conditions | 2 |
| C. Can germinate/regenerate in existing vegetation in a wide range of conditions | 3 |
| U. Unknown (No studies have been completed) | Score 3 |

**Documentation:**
Describe germination requirements:
Many seeds do not have dormancy or require stratification to germinate, germination rates as high as 49% have been observed in wide range of conditions.

Sources of information:
Lumer & Yost, 1995; Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

2.7. Other species in the genus invasive in New York or elsewhere
| A. No | 0 |
| B. Yes | 3 |
| U. Unknown | Score 3 |

**Documentation:**
Species:
3. ECOLOGICAL AMPLITUDE AND DISTRIBUTION

3.1. Density of stands in natural areas in the northeastern USA and eastern Canada (use same definition as Gleason & Cronquist which is: “The part of the United States covered extends from the Atlantic Ocean west to the western boundaries of Minnesota, Iowa, northern Missouri, and southern Illinois, south to the southern boundaries of Virginia, Kentucky, and Illinois, and south to the Missouri River in Missouri. In Canada the area covered includes Nova Scotia, Prince Edward Island, New Brunswick, and parts of Quebec and Ontario lying south of the 47th parallel of latitude”)

A. No large stands (no areas greater than 1/4 acre or 1000 square meters) 0
B. Large dense stands present in areas with numerous invasive species already present or disturbed landscapes 2
C. Large dense stands present in areas with few other invasive species present (i.e. ability to invade relatively pristine natural areas) 4
U. Unknown

Score 4

Documentation:
Identify reason for selection, or evidence of weedy history:
Large stands observed in NY and Northeast, some in relatively pristine areas with few other invasives present.
Sources of information:
Cordeiro, 2006; authors' personal observations

3.2. Number of habitats the species may invade

A. Not known to invade any natural habitats given at A2.3 0
B. Known to occur in two or more of the habitats given at A2.3, with at least one a natural habitat. 1
C. Known to occur in three or more of the habitats given at A2.3, with at least two a natural habitat. 2
D. Known to occur in four or more of the habitats given at A2.3, with at least three a natural habitat. 4
E. Known to occur in more than four of the habitats given at A2.3, with at least four a natural habitat. 6
U. Unknown

Score 4

Documentation:
Identify type of habitats where it occurs and degree/type of impacts:
See A2.3.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; Brooklyn Botanic Garden, 2009

3.3. Role of disturbance in establishment

A. Requires anthropogenic disturbances to establish. 0
B. May occasionally establish in undisturbed areas but can readily establish in areas with natural or anthropogenic disturbances. 2
C. Can establish independent of any known natural or anthropogenic disturbances. 4
U. Unknown

Score 4

Documentation:
Identify type of disturbance:
Species has been noted in forested areas without any recent known natural or anthropogenic disturbances (K. Schwager, pers. obs.). This species is often associated with disturbances; however, once established, the plant will readily move into nearby, less disturbed habitats.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006; K. Schwager pers. obs.

3.4. Climate in native range
A. Native range does not include climates similar to New York 0
B. Native range possibly includes climates similar to at least part of New York. 1
C. Native range includes climates similar to those in New York 3
U. Unknown

Documentation:
Describe what part of the native range is similar in climate to New York:
Europe.
Sources of information:
Tutin & Heywood, 1972.

Score 3

3.5. Current introduced distribution in the northeastern USA and eastern Canada (see question 3.1 for definition of geographic scope)
A. Not known from the northeastern US and adjacent Canada 0
B. Present as a non-native in one northeastern USA state and/or eastern Canadian province. 1
C. Present as a non-native in 2 or 3 northeastern USA states and/or eastern Canadian provinces. 2
D. Present as a non-native in 4–8 northeastern USA states and/or eastern Canadian provinces, and/or categorized as a problem weed (e.g., “Noxious” or “Invasive”) in 1 northeastern state or eastern Canadian province. 3
E. Present as a non-native in >8 northeastern USA states and/or eastern Canadian provinces, and/or categorized as a problem weed (e.g., “Noxious” or “Invasive”) in 2 northeastern states or eastern Canadian provinces. 4
U. Unknown

Documentation:
Identify states and provinces invaded:
CT, IL, IN, KY, MA, MD, ME, MI, MN, NH, NJ, NY, OH, PA, RI, VT, WI; Ontario, Quebec
Sources of information: See known introduced range in plants.usda.gov, and update with information from states and Canadian provinces.
USDA, 2009.

Score 4

3.6. Current introduced distribution of the species in natural areas in the eight New York State PRISMs (Partnerships for Regional Invasive Species Management)
A. Present in none of the PRISMs 0
B. Present in 1 PRISM 1
C. Present in 2 PRISMs 2
D. Present in 3 PRISMs 3
E. Present in more than 3 PRISMs or on the Federal noxious weed lists 4
U. Unknown

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Describe distribution:
Recorded from all eight PRISMs.
Sources of information:

Total Possible 25
Section Three Total 23

4. DIFFICULTY OF CONTROL

4.1. Seed banks
A. Seeds (or vegetative propagules) remain viable in soil for less than 1 year, or does not make viable seeds or persistent propagules.  0
B. Seeds (or vegetative propagules) remain viable in soil for at least 1 to 10 years  2
C. Seeds (or vegetative propagules) remain viable in soil for more than 10 years  3
U. Unknown

Documentation:
Identify longevity of seed bank:
Seed bank dynamics are unknown, most seeds germinate in the fall upon formation or in the subsequent spring. However, longevity of seeds beyond this is not known.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

4.2. Vegetative regeneration
A. No regrowth following removal of aboveground growth  0
B. Regrowth from ground-level meristems  1
C. Regrowth from extensive underground system  2
D. Any plant part is a viable propagule  3
U. Unknown

Documentation:
Describe vegetative response:
Plants readily resprout from extensive underground rhizomes.
Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; Cordeiro, 2006.

4.3. Level of effort required
A. Management is not required: e.g., species does not persist without repeated anthropogenic disturbance.  0
B. Management is relatively easy and inexpensive: e.g. 10 or fewer person-hours of manual effort (pulling, cutting and/or digging) can eradicate a 1 acre infestation in 1 year (infestation averages 50% cover or 1 plant/100 ft²).  2
C. Management requires a major short-term investment: e.g. 100 or fewer person-hours/year of manual effort, or up to 10 person-hours/year using mechanical equipment (chain saws, mowers, etc.) for 2-5 years to suppress a 1 acre infestation. Eradication is difficult, but possible (infestation as above).  3
D. Management requires a major investment: e.g. more than 100 person-hours/year of manual effort, or more than 10 person hours/year using mechanical equipment, or the use of herbicide, grazing animals, fire, etc. for more than 5 years to suppress a 1 acre infestation. Eradication may be impossible (infestation as above).  4
U. Unknown

Documentation:
Identify types of control methods and time-term required:
Eraciation of isolated plants and small patches is possible with persistence and an early
detection system, but large scale infestations will require persistent effort and continuous
follow-up monitoring to control.

Biocontrol: There are few to no native pests, diseases or other natural controls in North
America, but there are several potential biological control agents associated with the related
Vincetoxicum hirundinaria in Europe.

Mechanical: Mowing and hand-pulling are only effective if the extensive and deep root
crowns are removed and completely destroyed to prevent resprouting. A study of C.
rossicum found that when a single cutting or mowing treatment is to be employed, cutting
after the first fruits are produced but before they are fully developed is recommended.

Chemical: Response to herbicides varies by site and site condition. In treating whole plants
or tall stems, glyphosate can be used in denegraded patches with little desirable vegetation;
triclopyr ester is better in sites with desirable grasses to be conserved. In cut-stem
applications, glyphosate was superior to all triclopyr amine concentrations. Dicamba and
2,4-D alone had poor results on C. rossicum. In all cases, repeated follow up herbicide
treatments are necessary.

Fire: Fire alone is ineffective but may be useful after herbicide to control seedlings.

Sources of information:
Lawlor, 2001; DiTommaso et al., 2005; McKague & Cappuccino, 2005; Cordeiro, 2006.

Total Possible 7
Section Four Total 6
Total for 4 sections Possible 97
Total for 4 sections 87

C. STATUS OF CULTIVARS AND HYBRIDS:

At the present time (May 2008) there is no protocol or criteria for assessing the invasiveness of cultivars
independent of the species to which they belong. Such a protocol is needed, and individuals with the
appropriate expertise should address this issue in the future. Such a protocol will likely require data on
cultivar fertility and identification in both experimental and natural settings.

Hybrids (crosses between different parent species) should be assessed individually and separately from
the parent species wherever taxonomically possible, since their invasiveness may differ from that of the
parent species. An exception should be made if the taxonomy of the species and hybrids are uncertain,
and species and hybrids can not be clearly distinguished in the field. In such cases it is not feasible to
distinguish species and hybrids, and they can only be assessed as a single unit.

Some cultivars of the species known to be available:

References for species assessment:


**Citation:** This NY ranking form may be cited as: Jordan, M.J., G. Moore and T.W. Weldy. 2008. Invasiveness ranking system for non-native plants of New York. Unpublished. The Nature Conservancy, Cold Spring Harbor, NY; Brooklyn Botanic Garden, Brooklyn, NY; The Nature Conservancy, Albany, NY. Note that the order of authorship is alphabetical; all three authors contributed substantially to the development of this protocol.

**Acknowledgments:** The NY form incorporates components and approaches used in several other systems, cited in the references below. Valuable contributions by members of the Long Island Invasive Species Management Area’s Scientific Review Committee were incorporated in revisions of this form. Original members of the LIISMA SRC included representatives of the Brooklyn Botanic Garden; The Nature Conservancy; New York Natural Heritage Program, New York Sea Grant; New York State Office of Parks, Recreation and Historic Preservation; National
References for ranking form:


