

NEW YORK NON-NATIVE PLANT INVASIVENESS RANKING FORM

| | | |
|----------------------|-------------------------------|------------------------------------|
| Scientific name: | Ligustrum vulgare | USDA Plants Code: LIVU |
| Common names: | European privet | |
| Native distribution: | Europe, Asia, northern Africa | |
| Date assessed: | February 11, 2009 | |
| Assessors: | Gerry Moore | |
| Reviewers: | LIISMA SRC | |
| Date Approved: | 25 February 2009 | Form version date: 22 October 2008 |


New York Invasiveness Rank: Moderate (Relative Maximum Score 50.00-69.99)

| Distribution and Invasiveness Rank (<i>Obtain from PRISM invasiveness ranking form</i>) | | | |
|--|--|----------------------|-------------------------|
| | Status of this species in each PRISM: | Current Distribution | PRISM Invasiveness Rank |
| 1 | Adirondack Park Invasive Program | Not Assessed | Not Assessed |
| 2 | Capital/Mohawk | Not Assessed | Not Assessed |
| 3 | Catskill Regional Invasive Species Partnership | Not Assessed | Not Assessed |
| 4 | Finger Lakes | Not Assessed | Not Assessed |
| 5 | Long Island Invasive Species Management Area | Widespread | Moderate |
| 6 | Lower Hudson | Not Assessed | Not Assessed |
| 7 | Saint Lawrence/Eastern Lake Ontario | Not Assessed | Not Assessed |
| 8 | Western New York | Not Assessed | Not Assessed |

| Invasiveness Ranking Summary (see details under appropriate sub-section) | | Total (Total Answered*) Possible | Total |
|--|---|---|-----------------|
| 1 | Ecological impact | 40 (<u>30</u>) | 13 |
| 2 | Biological characteristic and dispersal ability | 25 (<u>22</u>) | 21 |
| 3 | Ecological amplitude and distribution | 25 (<u>25</u>) | 19 |
| 4 | Difficulty of control | 10 (<u>10</u>) | 6 |
| | Outcome score | 100 (<u>87</u>) ^b | 59 ^a |
| | Relative maximum score [†] | | 67.82 |
| | New York Invasiveness Rank [§] | Moderate (Relative Maximum Score 50.00-69.99) | |

* 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

| | |
|---|--|
| <p>A1.1. Has this species been documented to persist without cultivation in NY? (reliable source; voucher not required)</p> <p><input checked="" type="checkbox"/> Yes – continue to A1.2</p> <p><input type="checkbox"/> No – continue to A2.1</p> <p>A1.2. In which PRISMs is it known (see inset map)?</p> <p><input checked="" type="checkbox"/> Adirondack Park Invasive Program</p> <p><input checked="" type="checkbox"/> Capital/Mohawk</p> <p><input checked="" type="checkbox"/> Catskill Regional Invasive Species Partnership</p> <p><input checked="" type="checkbox"/> Finger Lakes</p> <p><input checked="" type="checkbox"/> Long Island Invasive Species Management Area</p> <p><input checked="" type="checkbox"/> Lower Hudson</p> <p><input type="checkbox"/> Saint Lawrence/Eastern Lake Ontario</p> <p><input checked="" type="checkbox"/> Western New York</p> |  <p style="font-size: small;">Partnerships for Regional Invasive Species Management 2008</p> |
|---|--|

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Documentation:

Sources of information:

Weldy & Werier, 2008; Brooklyn Botanic Garden, 2009.

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)

| | |
|--------------|--|
| Not Assessed | Adirondack Park Invasive Program |
| Not Assessed | Capital/Mohawk |
| Not Assessed | Catskill Regional Invasive Species Partnership |
| Not Assessed | Finger Lakes |
| Very Likely | Long Island Invasive Species Management Area |
| Not Assessed | Lower Hudson |
| Not Assessed | Saint Lawrence/Eastern Lake Ontario |
| Not Assessed | Western New York |

Documentation:

Sources of information (e.g.: distribution models, literature, expert opinions):

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)

| | |
|--|--------------|
| | Distribution |
| Adirondack Park Invasive Program | Not Assessed |
| Capital/Mohawk | Not Assessed |
| Catskill Regional Invasive Species Partnership | Not Assessed |
| Finger Lakes | Not Assessed |
| Long Island Invasive Species Management Area | Widespread |
| Lower Hudson | Not Assessed |
| Saint Lawrence/Eastern Lake Ontario | Not Assessed |
| Western New York | Not Assessed |

Documentation:

Sources of information:

Weldy & Werier, 2008; 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.

| | | |
|---|--|--|
| <p>Aquatic Habitats</p> <p><input type="checkbox"/> Salt/brackish waters</p> <p><input type="checkbox"/> Freshwater tidal</p> <p><input type="checkbox"/> Rivers/streams</p> <p><input type="checkbox"/> Natural lakes and ponds</p> <p><input type="checkbox"/> Vernal pools</p> <p><input type="checkbox"/> Reservoirs/impoundments*</p> | <p>Wetland Habitats</p> <p><input type="checkbox"/> Salt/brackish marshes</p> <p><input type="checkbox"/> Freshwater marshes</p> <p><input type="checkbox"/> Peatlands</p> <p><input type="checkbox"/> Shrub swamps</p> <p><input checked="" type="checkbox"/> Forested wetlands/riparian</p> <p><input type="checkbox"/> Ditches*</p> <p><input type="checkbox"/> Beaches and/or coastal dunes</p> | <p>Upland Habitats</p> <p><input checked="" type="checkbox"/> Cultivated*</p> <p><input checked="" type="checkbox"/> Grasslands/old fields</p> <p><input type="checkbox"/> Shrublands</p> <p><input checked="" type="checkbox"/> Forests/woodlands</p> <p><input type="checkbox"/> Alpine</p> <p><input checked="" type="checkbox"/> Roadsides*</p> |
|---|--|--|

Other potential or known suitable habitats within New York:

Documentation:

Sources of information:

Brooklyn Botanic Garden, 2009.

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B. INVASIVENESS RANKING

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. 0
- B. Influences ecosystem processes to a minor degree (e.g., has a perceivable but mild influence on soil nutrient availability) 3
- C. Significant alteration of ecosystem processes (e.g., increases sedimentation rates along streams or coastlines, reduces open water that are important to waterfowl) 7
- 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) 10
- U. Unknown

Score 3

Documentation:

Identify ecosystem processes impacted (or if applicable, justify choosing answer A in the absence of impact information)
 Tomaino (2004) reported "no mention of changes in abiotic ecosystem processes or system-wide parameters found in the literature; assumption is that any alterations are not major/irreversible." Dense growth clearly limits light availability to layers below thus influencing ecosystem processes to a minor degree. More studies needed on the effects of this plant to ecosystem processes and system-wide parameters.
 Sources of information:
 Tomaino, 2004; author's pers. obs.

1.2. Impact on Natural Community Structure

- A. No perceived impact; establishes in an existing layer without influencing its structure 0
- B. Influences structure in one layer (e.g., changes the density of one layer) 3
- C. Significant impact in at least one layer (e.g., creation of a new layer or elimination of an existing layer) 7
- D. Major alteration of structure (e.g., covers canopy, eradicating most or all layers below) 10
- U. Unknown

Score 3

Documentation:

Identify type of impact or alteration:
 Can form dense stands that alter the density of the shrub layer. No evidence that there is a major alteration of structure or significant impact in layer (e.g., creation of new layer or elimination of an existing layer).
 Sources of information:
 Weber, 2003; Tomaino, 2004; author's pers. obs.

1.3. Impact on Natural Community Composition

- A. No perceived impact; causes no apparent change in native populations 0
- B. Influences community composition (e.g., reduces the number of individuals in one or more native species in the community) 3
- 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

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several native species, reducing biodiversity or change the community composition towards species exotic to the natural community)

U. Unknown

Score

| |
|---|
| 7 |
|---|

Documentation:

Identify type of impact or alteration:

Can form thick dense stands that can significantly reduce population sizes of native species.

Sources of information:

Weber, 2003; Tomaino, 2004; author's 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

| |
|---|
| U |
|---|

Documentation:

Identify type of impact or alteration:

Studies on impacts to other species groups not done (Tomaino, 2004). Flowers are pollinated by many insects (author's obs.). Genus banned in New Zealand where it has been reported to cause asthma and eczema in some people (Swearingen et al., 2002). Reported to be toxic to animals but deer browsing has also been observed (Gomez, 2009).

Sources of information:

Swearingen et al., 2002; Tomaino 2004; Gomez, 2009; author's pers. obs.

Total Possible

| |
|----|
| 30 |
|----|

Section One Total

| |
|----|
| 13 |
|----|

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 known, then maximum seed production reported to be greater than 1000 seeds per plant.) 4
- U. Unknown

Score

| |
|---|
| 4 |
|---|

Documentation:

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| | |
|--|--|
| Describe key reproductive characteristics (including seeds per plant): Produces abundant seeds (1000 per plant); also, Dirr & Heuser (1987) reported 83% germination of seed. Vegetative spread through root suckering. Sources of information: Dirr & Heuser, 1987; Randall & Marinell, 1996; APRS Implementation Team, 2001; Tomaino, 2004; author's 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) | 0 |
| B. Infrequent or inefficient long-distance dispersal (occurs occasionally despite lack of adaptations) | 1 |
| 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) | 2 |
| 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) | 4 |
| U. Unknown | |

Score 4

| | |
|---|--|
| Documentation: Identify dispersal mechanisms: Numerous opportunities for long distance dispersal as birds eat the fruits. Sources of information: Miller, 2003; Tomaino, 2004; author's pers. obs. | |
|---|--|

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 | 0 |
| B. Low (human dispersal to new areas occurs almost exclusively by direct means and is infrequent or inefficient) | 1 |
| C. Moderate (human dispersal to new areas occurs by direct and indirect means to a moderate extent) | 2 |
| D. High (opportunities for human dispersal to new areas by direct and indirect means are numerous, frequent, and successful) | 3 |
| U. Unknown | |

Score 2

| | |
|--|--|
| Documentation: Identify dispersal mechanisms: Introduced into U.S. for hedgerow plantings. Less commonly planted for these purposes today. Short-lived seeds makes transport by soils unlikely. Possible that removal of yard waste might be a potential spread through indirect means. Dirr & Heuser (1987) reported that it was used as understock for <i>Syringa vulgaris</i> but now discontinued due to suckering. Sources of information: Dirr & Heuser, 1987; Tomaino, 2004; author's pers. obs. | |
|--|--|

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.

- | | |
|--|---|
| 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 | |

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Score

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|---|
| 6 |
|---|

Documentation:

Evidence of competitive ability:
Perennial, somewhat shade tolerant (based on field observations less shade tolerant than *L. obtusifolium*), able to grow on infertile soils.
Sources of information:
Tomaino 2004; author's pers. obs.

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:
Can form thickets.
Sources of information:
Webers, 2003; Tomaino, 2004; author's pers. obs.

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

| |
|---|
| U |
|---|

Documentation:

Describe germination requirements:
Germination requirements in the field not known.
Sources of information:

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:
Ligustrum obtusifolium Weldy & Werier, 2008; Brooklyn Botanic Garden, 2009.

Total Possible

| |
|----|
| 22 |
|----|

Section Two Total

| |
|----|
| 21 |
|----|

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,

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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

Documentation:
 Identify reason for selection, or evidence of weedy history:
 Large stands are generally found in disturbed areas (roadsides, fields, woodland edges) with other invasives present.
 Sources of information:
 Miller, 20003; Weber 2003;Tomaino, 2004; author's pers. obs.

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

Documentation:
 Identify type of habitats where it occurs and degree/type of impacts:
 See A2.3.
 Sources of information:
 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

Documentation:
 Identify type of disturbance:
 Readily establishes in areas with natural or anthropogenic disturbance; does not require anthropogenic disturbance.
 Sources of information:
 Weber, 2003; Tomaino, 2004; author's 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

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| | |
|--|--|
| Documentation: Describe what part of the native range is similar in climate to New York: Europe, temperate Asia. Sources of information: Brooklyn Botanic Garden, 2009. | |
|--|--|

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 | |

Score

| |
|---|
| 4 |
|---|

| | |
|---|--|
| Documentation: Identify states and provinces invaded: All states and provinces except Quebec. Sources of information: See known introduced range in plants.usda.gov, and update with information from states and Canadian provinces. U.S.D.A., 2009. | |
|---|--|

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 | |

Score

| |
|---|
| 4 |
|---|

| | |
|---|--|
| Documentation: Describe distribution: See A1.1. Sources of information: Weldy & Werier, 2008; Brooklyn Botanic Garden, 2009. | |
|---|--|

| | | |
|--|---------------------|----|
| | Total Possible | 25 |
| | Section Three Total | 19 |

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 |

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- C. Seeds (or vegetative propagules) remain viable in soil for more than 10 years 3
- U. Unknown

Score 0

Documentation:

Identify longevity of seed bank:

Panetta (2009): "Seeds of both broad-leaved and small-leaved privets appear to be relatively short-lived. In the first trial, there was a flush of emergence in the first few months (winter and spring) following sowing, with no further seedlings emerging after 7 months for broadleaved privet and 5 months for small-leaved privet." Rehder (1922) reported that Ligustrum seeds could be propagated from seeds sown in the fall and noted that some would not germinate until the following season. No evidence that seeds persist for one year or more. Daniel Ryniec, curator of BBG's lilac collection, has made similar observations in the closely related lilacs (Syringa).

Sources of information:

Rehder, 1922; Penetta, 2009.

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

Score 2

Documentation:

Describe vegetative response:

Regrowth can occur from root suckering.

Sources of information:

Tomaino, 2004.

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

Score 4

Documentation:

Identify types of control methods and time-term required:

Tomaino (2004): "Once established, Ligustrum vulgare is difficult to control; smaller plants can be dug out, larger plants can be cut and the cut stumps treated with glyphosate (Weber 2003). Larger plants are almost impossible to remove by hand, herbicides are needed (Randall & Marinelli 1996). Foilage treatment is best for actively growing plants and cut-stump treatment for freshly cut wood (Randall & Marinelli 1996). In Tennessee, it was reported that goats can be used to control privet if they can reach it (Batcher 2000). In Alabama, it was reported that burning top-kills L. vulgare and eliminates it over time

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(Batcher 2000)."

Sources of information:

Batcher, 2000; Randall & Marinelli, 2003; Tomaino, 2004

| | |
|--------------------|----|
| Total Possible | 10 |
| Section Four Total | 6 |

| | |
|--------------------------------------|-----------|
| Total for 4 sections Possible | 87 |
| Total for 4 sections | 59 |

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: 'Cheyenne', 'Densiflorum', 'Lodense', 'Pyramidale'

References for species assessment:

Alien plants ranking system (APRS) Implementation Team. 2001. Alien plants ranking system version 7.1. Southwest Exotic Plant Information Clearinghouse, Flagstaff, Arizona. <usgs.nau.edu/swepic> [Accessed February, 11, 2009].

Batcher, M. S. 2000. Element stewardship abstract for Ligustrum spp. Privet. The Nature Conservancy, Arlington, Virginia.

Bean, W. J. 1956. Ligustrum. Pp. 1165-1166 in F. J. Chittenden (ed.) Dictionary of Gardening. Clarendon Press, Oxford. 1712 pp.

Brooklyn Botanic Garden. 2009. AILANTHUS database. [Accessed on February 11, 2009.]

Dirr, M. A. and C. W. Heuser. 1987. The reference manual of woody plant propagation: from seed to tissue culture. Varsity Press Inc., Athens, Georgia. 239 pp.

Campbell, F. 2009. Worst Invasive Plant Species in the Conterminous United States that are sold by the Nursery Trade. American Lands Alliance, Washington, DC. <americanlands.org/gardeners_and_invasive_plants.htm>. [Accessed February 11, 2009.]

Flint, H. L. 1983. Landscape plants for eastern North America. John Wiley & Sons, New York. 677 pp.

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Gomez, F. 2009. Hybrid Poplar Trees. Privet standard. <hybridpoplars.com>. [Accessed February 11, 2009.]

Mehrhoff, L.J., J.A. Silander, Jr., S.A. Leicht and E. Mosher. 2003. IPANE: Invasive Plant Atlas of New England. Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT. <invasives.eeb.uconn.edu/ipane/> [Accessed February 11, 2009.]

Miller, J.H. 2003. Nonnative Invasive Plants of Southern Forests: A field guide for identification and control. Gen. Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 pp.

Panetta, D. 2009. Ecology and management of environmental weeds in south-eastern Queensland. <cbit.uq.edu.au/biocontrol/pest_plant_management/weeds_in_seq.htm>. [Accessed February 11, 2009].

Randall, J.M. and J. Marinelli (eds.) 1996. Invasive plants: weeds of the global garden. Brooklyn Botanic Garden, New York.

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NON-NATIVE PLANT INVASIVENESS RANKING FORM

Biology Department; Long Island Botanical Society; Long Island Weed Information Management System database manager; Suffolk County Department of Parks, Recreation and Conservation; Nassau County Department of Parks, Recreation and Museums; Suffolk County Soil & Water Conservation District.

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