NEW YORK
NON-NATIVE PLANT INVASIVENESS RANKING FORM

Scientific name:	Albizia julibrissin Durazz.	USDA Plants Code: ALJU
Common names:	Silktree, mimosa	
Native distribution:	Asia	
Date assessed:	2 June 2009; edited 3 August, 2009	
Assessors:	Steve Glenn, Gerry Moore	
Reviewers:	LIISMA SRC	
Date Approved:	24 June 2009	Form version date: 3 March 2009

New York Invasiveness Rank: Low (Relative Maximum Score 40.00-49.99)

Distribution and Invasiveness Rank (*Obtain from PRISM invasiveness ranking form*)			
	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	Low
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 (30)	3
2	Biological characteristic and dispersal ability	25 (25)	18
3	Ecological amplitude and distribution	25 (25)	11
4	Difficulty of control	10 (10)	4
	Outcome score	100 (90)[b]	36[a]
	Relative maximum score †		40.00
	New York Invasiveness Rank §	Low (Relative Maximum Score 40.00-49.99)	

* 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

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

Documentation:
Sources of information:
Brooklyn Botanic Garden, 2009; Weldy & Werier, 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):
Well established in PRISM. While widespread, neither seen forming large stands in the PRISM, nor any literature found suggesting this. Authors' personal observations; 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:
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	Wetland Habitats	Upland Habitats
☐ Salt/brackish waters	☐ Salt/brackish marshes	☐ Cultivated*
☐ Freshwater tidal	☐ Freshwater marshes	☒ Grasslands/old fields
☐ Rivers/streams	☐ Peatlands	☐ Shrublands
☐ Natural lakes and ponds	☐ Shrub swamps	☒ Forests/woodlands
☐ Vernal pools	☐ Forested wetlands/riparian	☐ Alpine
☐ Reservoirs/impoundments*	☐ Ditches*	☒ Roadsides*
	☐ Beaches and/or coastal dunes	

Other potential or known suitable habitats within New York:
Landfill, waste grounds, railroad banks, forest gaps (reported from stream/river shores in parts of the southeastern US but not seen in similar habitats in Northeast).

Documentation:
Sources of information:
Steury, 1999; Heaven et al., 2003; Maybury, 2004; Brooklyn Botanic Garden, 2009.

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.	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)
Fixes nitrogen but the lack of large stands of this species suggests that this impact is not significant.
Sources of information:
Rhoades et al., 1997; Maybury, 2004.

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: 0

Documentation:
Identify type of impact or alteration:
While reported to form dense stands under the right conditions, blocking light and severely reducing the herbaceous layer (Maybury, 2004), this phenomenon has not been observed to date in the Northeast (author's personal observations). Maybury (2004): "Biodiversity impacts are probably mostly in the southeastern U.S." In the Northeast, it is generally observed as single trees or small stands that exisit in the tree layer without influencing structure.
Sources of information:
Maybury, 2004; author's personal observations.

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 several native species, reducing biodiversity or change the community composition towards species exotic to the natural community)	10
U.	Unknown	

Score: 0

Documentation:
Identify type of impact or alteration:
While reported to suppress some native species (Maybury, 2004), this phenomenon has not been observed to date in the Northeast (authors' personal observations). Maybury (2004): "Biodiversity impacts are probably mostly in the southeastern U.S." No perceived impacts have been noted in NY or the Northeast.
Sources of information:
Maybury, 2004; authors' personal observations.

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:
No studies addressing the impact on other species located.
Sources of information:
Maybury, 2004.

Total Possible: 30
Section One Total: 3

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:
Describe key reproductive characteristics (including seeds per plant):
Copius fruit production.
Sources of information:
Maybury, 2004; 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) 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:
Wind (anemochory) and water (hydrochory) dispersal have been reported.
Sources of information:
Fordham, 1968; Robinson & Handel, 1993; Remaley, 2005.

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:
Popular as an ornamental; sold and planted (Maybury, 2004). Seeds possibly dispersed via contaminated soils and mulch (Robinson & Handel, 1993). Studied as a possible source of domestic animal forage (Addlestone et al., 1999); and nitrogen supplement to poor soils via alley cropping (Rhoades et al., 1997).
Sources of information:
Robinson & Handel, 1993; Rhoades et al., 1997; Addlestone et al., 1999; Maybury, 2004

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

Score 6

Documentation:
Evidence of competitive ability:
Perennial, nitrogen fixer, grows rapidly, resprouts readily. Capable of growing in a wide range of soil conditions, including infertile ones, salt tolerant.
Sources of information:
Maybury, 2004; Remaley, 2005.

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 0

Documentation:
Describe growth form:
Not observed forming thickets or a smothering habit in the Northeast region.
Sources of information:
Authors' personal observations.

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 2

Documentation:
Describe germination requirements:
Germination is hindered by a strongly impervious seed coat. Fordham (1968): When pods of Albizia julibrissin have reached maturity and are about to change from green to straw-color, the coats of the seeds within consist of thin, soft membranes. At this stage they offer no barrier to germination and seedlings appear shortly after the seeds are sown. But as ripening continues, the seeds are reduced to about one-third their original weight and develop flinty-hard water impermeable coats. " Fordham found that in this stage seeds required strong scarification treatments. Germination enhanced by fire, which no doubt weakens the seed coat.
Sources of information:
Fordham, 1968; Gogue & Emino, 1979; Remaley, 2005.

2.7. Other species in the genus invasive in New York or elsewhere

A. No 0

B. Yes 3

U. Unknown

Score 0

Documentation:
Species:
U.S.D.A., 2009; Weldy & Werier, 2009.

Total Possible 25

Section Two Total 18

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: 0

Documentation:
Identify reason for selection, or evidence of weedy history:
Neither seen forming large stands in the Northeast , nor any literature found suggesting thus.
Sources of information:
maybury, 2004; 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: 2

Documentation:
Identify type of habitats where it occurs and degree/type of impacts:
See A2.3.
Sources of information:
Steury, 1999; Heaven et al., 2003; Maybury, 2004; 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: 2

Documentation:
Identify type of disturbance:
Reportedly needs human-caused or natural disturbance to establish; no evidence that it requires anthropogenic disturbance to establish.

Sources of information:
Maybury, 2004; authors' 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

Score 1

Documentation:
Describe what part of the native range is similar in climate to New York:
The species is from Eurasia in Iran, China and Korea; the range exhibits climates that are more typical of the southeastern United States, although also similar to southern New York. In cultivation it is reported to be hardy to Zone 6.
Sources of information:
Maybury, 2004; 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:
CT, DC, DE, IL, IN, KY, MA, MD, NJ, NY, OH, PA, VA, WV.
Sources of information: See known introduced range in plants.usda.gov, and update with information from states and Canadian provinces.
Brooklyn Botanic Garden, 2009; 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 2

Documentation:
Describe distribution:
See A1.1.
Sources of information:

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

Total Possible	25
Section Three Total	11

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	

Score: 3

Documentation:
Identify longevity of seed bank:
Fordham (1968): "In 1964 a few seeds from one of our own herbarium specimens that had been prepared in 1897 were treated with hot water, and one germinated after having been kept for 67 years under the dry conditions of an herbarium."
Sources of information:
Fordham, 1968; Maybury, 2004

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: 1

Documentation:
Describe vegetative response:
Perennial, resprouts readily if cut.
Sources of information:
Maybury, 2004; Remaley, 2005.

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 ft^2).	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: 0

Documentation:
Identify types of control methods and time-term required:
Management not required in New York. Control measures used in other parts of the U.S.

given below (taken from Remaley, 2005). However, in New York it is not known to require management.
Mechanical: Trees can be cut at ground level with power or manual saws. Cutting is most effective when trees have begun to flower to prevent seed production. Because mimosa spreads by suckering, resprouts are common after treatment. Cutting is an initial control measure and will require either an herbicidal control or repeated cutting for resprouts. Girdling is effective on large trees where the use of herbicides is impractical. Using a hatchet, make a cut through the bark encircling the base of the tree, approximately six inches above the ground. Be sure that the cut goes well below the bark. This method will kill the top of the tree but resprouts are common and may require a follow-up treatment with a foliar herbicide. Hand pulling will effectively control young seedlings. Plants should be pulled as soon as they are large enough to grasp, but before they are old enough to flower. Seedlings are best pulled after a rain when the soil is loose. The entire root must be removed since broken fragments may resprout.

Chemical: Silk tree seedlings and small trees can be controlled by applying a 2% solution of glyphosate (e.g., Roundup®) or triclopyr (e.g., Garlon®) and water plus a 0.5% non-ionic surfactant to thoroughly wet all leaves. The cut-stump and basal bark herbicidal methods should be considered when treating individual trees or where the presence of desirable species preclude foliar application. Stump treatments can be used as long as the ground is not frozen. Horizontally cut stems at or near ground level. Immediately apply a 25% solution of glyphosate or triclopyr and water to the cut stump making sure to cover the outer 20% of the stump. Basal bark applications are effective throughout the year as long as the ground is not frozen. Apply a mixture of 25% triclopyr and 75% horticultural oil to the base of the tree trunk to a height of 12-15 inches from the ground. Thorough wetting is necessary for good control; spray until run-off is noticeable at the ground line.
Sources of information:
Remaley, 2005.

Total Possible	10
Section Four Total	4

Total for 4 sections Possible	90
Total for 4 sections	36

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: 'Alba', 'Ernest Wilson' ,'Summer Chocolate', 'Ishii Weeping' (or 'Pendula'), 'Charlotte', 'Tryon'

References for species assessment:

Addlestone, B. J., J. P. Mueller, & J. M. Luginbuhl. 1999. The establishment and early growth of three leguminous tree species for use in silvopastoral systems of the southeastern USA. Agroforestry Systems. 44(2-3):253-265.

Brooklyn Botanic Garden. 2009. AILANTHUS database. [Accessed on 2 June 2009].

Fordham, A.J. 1968. Propagation of Albizia julibrissin. Arnoldia 28: 36-40.

Gogue, G. J. & E. R. Emino. 1979. Seed coat scarification of Albizia julibrissin Durazz. by natural mechanisms. J. Amer. Soc. Hort. Sci. 104(3):421-423.

Heaven, J. B., F. E. Gross & A. T. Gannon. 2003. Vegetation comparison of a natural and a created emergent marsh wetland. Southeastern Naturalist. 2(2):195-206.

Maybury, K. 2004. Albizia julibrissin. U.S. Invasive Species Impact Rank (I-Rank). NatureServe Explorer. <www.natureserve.org>. [Accessed on 2 June 2009].

Remaley, T. 2005. Plant Conservation Alliance's Alien Plant Working Group. Weeds Gone Wild: Alien Plant Invaders of Natural Areas. Albizia julibrissin. <http://www.nps.gov/plants/alien>. [Accessed on 2 June 2009].

Rhoades, C. C., T. M. Nissen & J. S. Kettler. 1997. Soil nitrogen dynamics in alley cropping and no-till systems on ultisols of the Georgia Piedmont, USA. Agroforestry Systems. 39(1):31-44.

Robinson, G. R. & S. N. Handel. 1993. Forest restoration on a closed landfill: rapid addition of new species by bird dispersal. Conservation Biology. 7(2):271-278.

Steury, B. W. 1999. Annotated list of vascular plants from a nontidal barrier wetland along the Chesapeake Bay in Calvert County, Maryland. Castanea. 64(2):187-200.

United States Department of Agriculture, National Resources Conservation Service. 2009. The PLANTS Database. National Plant Data Center, Baton Rouge, Louisiana. [Accessed on 2 June 2009].

Weldy, T. & D. Werier. 2009. New York Flora Atlas. [S. M. Landry and K. N. Campbell (original application development), Florida Center for Community Design and Research. University of South Florida]. New York Flora Association, Albany, New York. [Accessed on 2 June 2009].

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 Park Service; Brookhaven National Laboratory; New York State Department of Environmental Conservation Region 1; Cornell Cooperative Extension of Suffolk/Nassau Counties; Long Island Nursery and Landscape Association; Long Island Farm Bureau; SUNY Farmingdale Ornamental Horticulture Department; Queens College 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.

References for ranking form:

Carlson, Matthew L., Irina V. Lapina, Michael Shephard, Jeffery S. Conn, Roseann Densmore, Page Spencer, Jeff Heys, Julie Riley, Jamie Nielsen. 2008. Invasiveness ranking system for non-native plants of Alaska. Technical Paper R10-TPXX, USDA Forest Service, Alaska Region, Anchorage, AK XX9. Alaska Weed Ranking Project may be viewed at: http://akweeds.uaa.alaska.edu/akweeds_ranking_page.htm.

Heffernan, K.E., P.P. Coulling, J.F. Townsend, and C.J. Hutto. 2001. Ranking Invasive Exotic Plant Species in Virginia. Natural Heritage Technical Report 01-13. Virginia Dept. of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. 27 pp. plus appendices (total 149 p.).

Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1. NatureServe, Arlington, Virginia. http://www.natureserve.org/getData/plantData.jsp

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