NAME OF SPECIES: *Acer ginnala* Maxim.		
Synonyms: *Acer tataricum* (L) subsp. *ginnala* (1)		
Common Name: Amur maple, Siberian maple, ginnala maple (1, 4)	**Cultivars?** YES ☒ NO ☐	
A. CURRENT STATUS AND DISTRIBUTION		
I. In Wisconsin?	1. YES ☒	NO ☐
	2. Abundance: Over 50 occurrences of *A. ginnala* have been recorded in Wisconsin since 1929. Some reports are of amur maples in cultivation; however there are also reports of this species in natural areas and other non-cultivated settings. Furthermore, escaped populations of amur maple are probably underreported. (1, 2)	
	3. Geographic Range: *A. ginnala* occurs in at least 16 counties scattered throughout the state, from Douglas County in the North to Rock County in the South and from Brown County in the East to La Crosse County in the West. (1, 2)	
	1. Habitat Invaded: This species invades open forests and grasslands. (5, 6) In WI, most of the reported escaped occurrences of *A. ginnala* are in open wooded areas, including mixed hardwood-pine forests and cut-over stands of quaking aspen (*Populus tremoloides*). (1, 2) Disturbed Areas ☒ Undisturbed Areas ☒	
	5. Historical Status and Rate of Spread in Wisconsin: Since its importation to the U.S. for ornamental purposes in the 1860s, amur maple has escaped cultivation in the northeastern states and the upper Midwest. By 1950 *A. ginnala* was locally established from Maine to Connecticut and western New York. (3) The exact time of arrival in WI is unknown, but escaped occurrences of amur maple have been reported in at least 6 counties since the 1930s. (1, 2)	
	6. Proportion of potential range occupied: Probably only found in minor portions of its potential range in WI.	
II. Invasive in Similar Climate Zones	1. YES ☒	NO ☐
	Where (include trends): *A. ginnala* is reported throughout New England, the upper Midwest and in the Canadian provinces of Ontario, Manitoba and Quebec. (4) There are extensive naturalized populations in Illinois and Missouri. (6) The USFS has designated *A. ginnala* as invasive in CT, IL, MA, MO, NY, VT, and WI. (9) *A. ginnala* is hardy in zones 3-8. This species prefers cool summers and grows less vigorously at the southern end of its range. However, it is moderately drought-tolerant especially in shady habitats. (6)	
III. Invasive in Similar Habitat Types	1. Upland ☒ Wetland ☐ Dune ☐ Prairie ☒ Aquatic ☐ Forest ☒ Grassland ☒ Bog ☐ Fen ☐ Swamp ☐ Marsh ☐ Lake ☐ Stream ☐ Other:	
IV. Habitat Affected	1. Soil types favored or tolerated: Prefers moist, well-drained soils but can tolerate dry soils (7); salt tolerant and pH adaptable with a range of 6.1 to 7.5. (9)	

	2. Conservation significance of threatened habitats: *A. ginnala* has the potential to displace native shrubs and understory trees in open forests, and can shade out native species in prairie habitats. (5) Reported occurrences suggest this species invades disturbed or open habitats such as open woods, and fields and prairies. (6) In Connecticut, escaped occurrences of *A. ginnala* are reported from mostly yards, gardens, ditches, edges, and roadsides, but *A. ginnala* populations have also been documented in prairies, early successional forests and fields, and open woods. Reports from Illinois suggest that *A. ginnala* is most invasive in pastures and woodlands. (10) In New England it occurs along habitat edges, in disturbed habitats and in fragmented forests. (6) Because of its potential for long-distance dispersal and its high shade tolerance compared to most members of the genus *Acer*, *A. ginnala* may be a threat to intact forests. Its preference for cool, moist climates makes it a particular concern for forest systems in northern WI.
V. Native Habitat	1. List countries and native habitat types: Native to temperate Asia, specifically Russia, China, Manchuria, Mongolia, Korea and Japan. (9) In China, *A. ginnala* occurs in forests below 800m above sea level.
VI. Legal Classification	1. Listed by government entities? Connecticut – Potentially invasive, not banned. (7)
	2. Illegal to sell? YES ☐ NO ☒ Notes:
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. Type of plant: Annual ☐ Biennial ☐ Monocarpic Perennial ☐ Herbaceous Perennial ☐ Vine ☐ Shrub ☒ Tree ☒
	2. Time to Maturity: Not specified. For *A. saccharum*, minimum seed-bearing age is 30-40 years.
	3. Length of Seed Viability: Like the native sugar maple (*A. saccharum*), *A. ginnala* seeds are dormant and require stratification to germinate. (16) Seed banks have not been documented.
	1. Methods of Reproduction: Asexual ☐ Sexual ☒ Notes: Fruit is a winged samara. This species can produce 5,000 or more fruits per individual annually. (10)
	5. Hybridization potential: Not known to hybridize. Other maples species have been used in hybrid cultivars.
II. Climate	1. Climate restrictions: Cold hardy in zones 3-8. Moderately drought tolerant. (6)
	2. Effects of potential climate change: May spread northwards as global temperatures increase, making formerly cooler areas more habitable.
III. Dispersal Potential	1. Pathways - Please check all that apply: Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☐ Wind ☒ Water ☐ Other: Intentional: Ornamental ☒ Forage/Erosion control ☐ Medicine/Food: Other:

	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: Amur maple produces abundant seed that can be dispersed long distances by the wind. Once established, it is relatively shade and drought tolerant compared to other maples. Its common use as a horticultural species leads to escaped occurrences in both urban and rural areas.
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☒ LOW ☐ Amur maple leafs out early in spring, making seedlings relatively easy to detect in open woodlands or grasslands.
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: Thirty-seven fungi and 58 arthropod species have been reported from plants of the genus *Acer*. (9) Pests and pathogens of *A. ginnala* include: yellow-bellied sapsucker (*Sphyrapius varius*); bacterial disease including crown gall (*Agrobacterium tumefaciens*); and fungal disease including *Anthranose*, *Phytophthora* spp. basal rot and root rot, Verticillium wilt, and wood rots and decays. (6) No species-specific pathogens have been identified.
	2. Competition with native species: *A. ginnala* is shade-tolerant and can shade out understory species in forests or herbaceous species in grasslands. Allelopathic chemicals probably inhibit the growth of neighboring species (see below).
	2. Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) ☐ MEDIUM (1-6 yrs) ☐ LOW (7-10 yrs) ☐ Notes:
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☒ NO ☐ Notes: Replaces native shrubs and understory trees in forest ecosystems.
	2. Alteration of ecosystem/community structure? YES ☒ NO ☐ Notes: Can shade out native species in prairie ecosystems, converting prairie community to shaded shrubland or woodland.
	3. Alteration of ecosystem/community functions and processes? YES ☐ NO ☒ Notes: Specific effects are not yet documented.
	1. Allelopathic properties? YES ☒ NO ☐ Notes: One study showed that a chemical solution derived from the *A.ginnala* fruit impaired root development in herbaceous plants (fescue, tomato and lettuce). This suggests that the plant contains allelochemicals. (14)
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: Landscaping uses: Amur maple is valued as an ornamental species for its red fall foliage color and persistent pink fruit, showy winter trunk, and fragrant flowers. *A. ginnala* is also one of the hardiest maple species. It is shade-tolerant and drought-tolerant. Its multi-stemmed growth habit is conducive to growing hedges and

	screens. (4) Agroforestry: Amur maple is sometimes used in tree strips for windbreaks. Windbreaks protect livestock, enhance production, control soil erosion, reduce the impacts of storms and lower home heating costs. (4) Based on the 2011 WNA Economic Impact Survey, the following information was reported for this plant. Out of the 204 nurseries responding, 53 reported selling this plant. 30 reported it comprised <1% of their gross plant sales. 15 reported it comprised 1 – 2.9% of their gross plant sales. The estimated total dollar amount contributed to Wisconsin's economy by this plant is $470,745 . It ranks 6th among the 63 taxa surveyed. The estimated wholesale value of plants in production is $138,750. The majority of respondents said it took 3 to 5 years to produce this plant. The trend for the 2011 season was to remain unchanged (18).
II. Potential Socio-Economic Effects of Requiring Controls:	Positive: Negative:
III. Direct and indirect Socio-Economic Effects of Plant :	Notes:
IV. Increased Costs to Sectors Caused by the Plant:	Notes:
V. Effects on human health:	Notes:
VI. Potential socio-economic effects of restricting use:	Positive: Negative: Prohibiting the sale of *A. ginnala* will mean the loss of a major landscaping tree.
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes:
II. Responsiveness to prevention efforts:	Notes:
III. Effective Control tactics:	Mechanical ☒ Biological ☐ Chemical ☒ Times and uses: Manual: Hand pulling and cutting. The shoots may re-sprout but do not form roots. (6) Seedlings are shallow-rooted and can be removed by hand. *A. ginnala* can be controlled with prescribed burning in prairies. (6) Chemical: This species can be effectively controlled using general use herbicides such as glyphosate. An effective method is cutting followed by treatment of the stumps with herbicide. (6)
IV. Minimum Effort:	Notes:

V. Costs of Control:	Notes:
VI. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes:
VII. Non-Target Effects of Control:	Notes:
VIII. Efficacy of monitoring:	Notes:
IX. Legal and landowner issues:	Notes:

F. HYBRIDS AND CULTIVARS	
I. Known hybrids? YES ☐ NO ☒	Name of hybrid: Names of hybrid cultivars:
II. Species cultivars	Names of cultivars: Flame, Red Fruit, Bailey Compact, Compactum, Durand Dwarf (4); Embers (12); Mandy (Red Rhapsody) (13); Emerald Elf (15); Beethoven (Betzam), Mozart (Mozzam) (17); Nursery respondents reported growing MN Red, Burgundy, Curiel's Gold. 22 respondents provided cultivar and/or species information. Frequency of each: 'Flame' 11, species 9, Bailey Compact 5, 'Compactum' 4, 'Emerald Elf' 3, 'Embers' 2, and 1 each: 'Summer Splendor', MN Red, "dwarf", 'Burgundy', and 'Curiel's Gold'. Growers providing no cultivar information observed "no serious invasiveness problems" and that the plant is "minimally invasive". One grower recommended getting rid of the species.(18) From the pre-screen meeting, "Many cultivars with high seed production and germination. Dwarf cultivars of tatarica more popular. Durand Dwarf probably not invasive. Produces lots of seeds that germinate readily."(19)

	Notes: Several cultivars of *A. ginnala* are more shrub-like than tree-like; these are dense multi-stemmed plants usually not exceeding 5 feet in height. Red Fruit: collective term for types whose fruit color is brilliant red (4) Bailey Compact: compact shrubby form, 8-12' high (11). Has a compact, dark green, rounded crown. Flame: dense shrub or small tree with red fruits and red fall color, long arching branches (11, 15) Compactum: dense, compact, and grows vigorously to 5-6 feet (11) Durand Dwarf: shrubby cultivar, with branches more dense than Compactum; grows to 3-5 feet tall (11) Embers: bright red autumn color and bright red fruit (12) Mandy (Red Rhapsody): red fall color and red fruit (13) Emerald Elf: dwarf form (15) Beethoven (17)

G. REFERENCES USED:

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18	Wiegrefe, Susan. 2011. Wisconsin Nursery Association Survey of the Economic impact of potentially invasive species in Wisconsin
19	Tree, shrub, vine species assessment group pre-screen meeting.

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Reviewer(s) and date reviewed: Tom Boos, 7/26/2011

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