NAME OF SPECIES: *Robinia pseudoacacia* L.		
Synonyms: *Robinia pseudo-acacia* L., *Robinia pseudoacacia* L. var. *rectissima* (L.) Raber		
Common Name: Black locust, false acacia, yellow locust	**Cultivars?** YES ☒ NO ☐	
A. CURRENT STATUS AND DISTRIBUTION		
I. In Wisconsin?	1. YES ☒	NO ☐
	2. Abundance: There are over 100 records of naturalized populations of *R. pseudoacacia* in WI; however, this species is probably under-reported. (1, 2)	
	3. Geographic Range: Widespread in southern WI; locally abundant in central and northwestern WI. (1, 2)	
	4. Habitat Invaded: In WI, *R. pseudoacacia* has invaded upland prairies, savannas, roadsides, old fields, pastures, and woodlots. (5, 8) Disturbed Areas ☒ Undisturbed Areas ☒	
	5. Historical Status and Rate of Spread in Wisconsin: Black locust trees were planted extensively in the upper Midwest in the early 1900s to prevent soil erosion. (5) The earliest reports of *R. pseudoacacia* in WI are from 1880. Today this species is reported as escaped or naturalized in 40 counties across WI. (1, 2).	
	6. Proportion of potential range occupied: Already widespread in its generalized range within the U.S. (6)	
II. Invasive in Similar Climate Zones	1. YES ☒ NO ☐ Where (include trends): Populations of black locust are reported in natural areas and disturbed sites across the Great Lakes region. This species is naturalized throughout the contiguous U.S. and as far north as Nova Scotia. It is widespread in the central and eastern U.S. and is a known invasive in the New England states. (3, 7)	
III. Invasive in Which Habitat Types	1. Upland ☒ Wetland ☒ Dune ☒ Prairie ☒ Aquatic ☐ Forest ☒ Grassland ☐ Bog ☐ Fen ☐ Swamp ☐ Marsh ☐ Lake ☐ Stream ☒ Other: In the Great Lakes region, black locust populations are reported in secondary hardwood forests, degraded pine barrens, wetlands and floodplains, sand dunes and sand prairies. (14)	
IV. Habitat Affected	1. Soil types favored or tolerated: Prefers well-drained rocky, sandy or loamy soils. (5) Does not grow on excessively dry soils or poorly drained, heavy soils. Limestone soils and soils without pronounced subsoil development are favorable. This species can survive on very acid spoil banks. (13)	
	2. Conservation significance of threatened habitats: Black locust often occurs in disturbed habitats, but can also invade intact prairie communities. Habitats of high concern are upland forest, prairies and savannas, where *R. pseudoacacia* could alter plant community structure and long-term ecosystem processes. (6) In WI, upland forests, prairies and savannas are rated between G1-G4. (15)	
V. Native Range and Habitat	1. List countries and native habitat types: Native to central and southern Appalachia and the Ozarks. (5, 4) In its native range, this species thrives below 3,500 feet in mixed-mesophytic forests, slope forests and cove forests. It grows at low densities in the forest	

	interior but reaches high densities in forest openings and along forest edges. (13, 14)
VI. Legal Classification	1. Listed by government entities? Connecticut: Invasive, not banned Massachusetts: Prohibited (3)
	2. Illegal to sell? YES ☒ NO ☐ Notes: Legal to sell except in MA.
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: Black locust produces its largest seed crops when the tree is 15-40 years old, but some trees will bear seed as early as 6 years or as late as 60 years. This tree lives approximately 90 years. (12, 14)
	3. Length of Seed Viability: Seeds can remain viable in the soil for 10-88 years. (14)
	4. Methods of Reproduction: Asexual ☒ Sexual ☒ Notes: Reproduces by seed, by shoots from rhizomes, and by sprouting from stumps. This species has extensive shallow lateral root systems and forms massive clones by root suckering and stump sprouting. (5) Though it produces many seeds, seedlings are rare. The seeds have a thick impermeable seed coat and do not readily germinate without disturbance. (6, 13) *R. pseudoacacia* requires open conditions for establishment; it is often found on sites with natural or man-made disturbance. (14)
	5. Hybridization potential: Black locust hybridizes with Kelsey locust (*R. kelseyi*), New Mexico locust (*R. neomexicana*), clammy locust (*R. viscosa*), and bristly locust (*R. hispida*). (14)
II. Climate	1. Climate restrictions: Hardy in zones 4-9. In its native range this species grows in a humid climate (40-60 inches of annual precipitation). However, it has become naturalized over a large area that includes drier regions. (13)
	2. Effects of potential climate change: Changes in precipitation patterns or temperature could alter the naturalized range of black locust.
III. Dispersal Potential	1. Pathways - Please check all that apply: Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☐ Wind ☒ Water ☐ Other: gravity Intentional: Ornamental ☒ Forage/Erosion control ☒ Medicine/Food: Other: Notes: Black locust trees have limited seed dispersal. The seeds are large and fall close to the parent plant. Long-distance dispersal is rare, but possible. Reproduction by vegetative sprouting is more common than sexual reproduction. (14)
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: This species exhibits vigorous reproduction via root suckering and stump sprouting. (6) Suckering is stimulated in open areas rather than shady or sheltered areas. (13) Damage

	to roots from fire, wind, cutting or disease stimulates sprouting, suckering, and lateral spread. (5)
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☐ LOW ☒ Notes: Adult trees are distinguished by their deeply furrowed bark. Seedlings and sprouts are easily identified by long, paired thorns. (4)
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: *R. pseudoacacia* is susceptible to the locust borer (*Megacyllene robiniae*), the locust leaf miner (*Odontota dorsalis, Chalepus dorsalis*), and the locust twig borer (*Ecdytolopha insticiana*). Insect attack causes deformed growth and dieback. (5, 13)
	2. Competition with native species: Black locust forms dense stands and shades out native vegetation. (5) It is a shade-intolerant, early successional species, and grows quickly as a juvenile. (14) Black locust does not grow well in competition with grasses, vines and other trees. Seedling growth is inhibited allelopathically by certain herbaceous species including *Solidago altissima* and *Andropogon virginicus*. (13) The large, fragrant blossoms of *R. pseudoacacia* may cause competition with native plants for bee pollination. (6)
	Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☒ LOW (7-10 yrs) ☐ Notes:
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☒ NO ☐ Notes: Forms dense single-species stands; can reduce diversity of forest understory species or prairie species. (6) The presence or dominance of black locust may have effects on insect community diversity. One study in Arizona showed that fewer insect species were present in stands of *R. pseudoacacia* than in stands of the native locust (*R. neomexicana*). (10) Black locust cavities are used for nesting and roosting by bats and birds, and the foliage provides cover for birds and small mammals. (14)
	2. Alteration of ecosystem/community structure? YES ☒ NO ☐ Notes: Forms dense stands of trees in prairie and savanna habitats, shading out ground vegetation. (6)
	3. Alteration of ecosystem/community functions and processes? YES ☒ NO ☐ Notes: *R. pseudoacacia* is a nitrogen-fixer. In nutrient-poor environments, it may facilitate invasions by other non-native species by increasing the level of soil nitrogen. The effects of elevated soil nitrogen can continue even after the plants have

	been removed. (6) Fire regimes may be altered because of a lack of fuel where black locust has eliminated ground layer vegetation. (6)
	4. Allelopathic properties? YES ☒ NO ☐ Notes: In an experiment with Japanese grassland communities, allelochemicals from *R. pseudoacacia* leaf litter inhibited the growth of various weeds and crop species. (9)
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: Black locust wood is heavy, strong and durable. In the past it has been used for fence posts and ship-building. (14) It has been planted extensively for erosion-control windbreaks and for nectar production for bees. (7) It has also been widely planted as a street tree or ornamental in the U.S. (14) This species is still used today for erosion control and mine reclamation. (6) Based on the 2011 WNA Economic Impact Survey, the following information was reported for this plant. Out of the 204 nurseries responding, 7 reported selling this plant. 6 reported it comprised <1% of their gross plant sales. 1 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 $13,990. It ranks 41st among the 63 taxa surveyed. The estimated wholesale value of plants in production is $3,500 The majority of respondents said it took 6 to 12 months to produce this plant. The trend for the 2011 season was to remain unchanged (16).
II. Potential Socio-Economic Effects of Requiring Controls:	Positive: Negative: Requiring control of black locust would require removal of planted trees on private property in urban and rural areas, as well as the removal of existing black locust populations from natural areas and public lands.
III. Direct and indirect Socio-Economic Effects of Plant :	Notes: The toxic young shoots appear to be desirable to livestock; however the leaves, seeds and bark are toxic to if ingested in sufficient quantities. (5)
IV. Increased Costs to Sectors Caused by the Plant:	Notes:
V. Effects on human health:	Notes: Leaves, seeds and bark are toxic to humans if ingested. (5) In some cases poisoning may be fatal. Humans may also get dermatitis from exposure to black locust wood. The flowers can be cooked and eaten, or used to brew tea. (14)
VI. Potential socio-economic effects of restricting use:	Positive: Negative: Loss of nursery sales; loss of a valuable species for landscaping and particularly for erosion control.
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: No technique is entirely effective. Mechanical: Cutting and girdling are both ineffective at controlling black locust since they do not prevent sucker formation. Mowing

	and burning may temporarily control a population, but mowing may promote seed germination, and burning stimulates sprouting. Annual mowing may be sufficient to control first-year seedlings and prevent spread. (5) <u>Chemical:</u> Basal bark and cut-stump treatments of herbicide can be effective in controlling black locust. Cut-stump treatments work best when applied in late summer or early fall, or in winter when temperatures are above freezing. All stems in a clone must be treated. Foliar spray herbicides have been used with mixed results. For small, isolated plants or patches under 5' in height, a foliar spray can be used from mid-summer to early fall. This treatment works by inhibiting leaf bud growth and flower formation in the early spring. Every branch or stem must be sprayed. (5) The Nature Conservancy in Wisconsin attempted to control black locust by first cutting stems, followed by bulldozing to remove stumps, then treating the remaining stumps with glyphosate. This integrated management approach achieved 95% control. (14)
IV. Costs of Control:	Notes: This species is difficult to control once established. Chemical control is generally required. More than one year of treatment is required, as plants that appear to be killed by herbicide can resprout. (6)
V. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes:
VI. Non-Target Effects of Control:	Notes: There is high potential for non-target damage from foliar sprays; foliar sprays are not appropriate for use in high-quality natural areas. The extensive root system of black locust trees can also spread herbicides over large areas. (8)
VII. Efficacy of monitoring:	Notes:
VIII. Legal and landowner issues:	Notes: There are many plantings on private lands. (6) Cooperation with landowners for management will be necessary.
F. HYBRIDS AND CULTIVARS	
I. Known hybrids? YES ☒ NO ☐	Name of hybrid: Black locust hybridizes with Kelsey locust (*R. kelseyi*), New Mexico locust (*R. neomexicana*), clammy locust (*R. viscosa*), and bristly locust (*R. hispida*). (14)
	Names of hybrid cultivars:

II. Species cultivars	Names of cultivars: 'Shipmast' [*Robinia pseudoacacia* var. *rectissima].* (13) Twisty Baby (SAG) Freesia (yellow) (SAG) Windy City (used only in Chicago) (SAG) Purple Robe (16) Two respondents to the nursery survey offered conflicting opinions on invasiveness: "Big problem in our ditches in our area. Very invasive and should not be grown or planted here." "In 60+ years have seen little, if any, invasiveness by seed. This is a valuable species - especially on poor sites. Would like to see this dropped from the invasive list." (16)
	Notes:

G. REFERENCES USED:

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☒ WI DNR
☒ TNC
☒ Native Plant Conservation Alliance
☒ IPANE
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Author(s), Draft number, and date completed: Emily Matson, Draft 1, 5-24-10

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

Approved and Completed Date: 12/16/11