NAME OF SPECIES: Elaeagnus angustifolia L..	
Synonyms: Elaeagnus angustifolia var. orientalis (L.) Kuntze, Elaeagnus hortensis M. Bieb, Elaeagnus moorcroftii Wall. ex Schltdl., Elaeagnus orientalis L (10).	
Common Name: Russian olive; oleaster.	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES ☒ NO ☐
	2. Abundance: Found in 16 Wisconsin counties, mostly just scattered individuals (1).
	3. Geographic Range: Mostly Southern Wisconsin and the Green Bay area (1).
	4. Habitat Invaded: Open and semi-open areas - usually clutivated. Also in riparian areas and a tamarack swamp. (1) Disturbed Areas ☒ Undisturbed Areas ☒
	5. Historical Status and Rate of Spread in Wisconsin: First documented in WI in 1927. Most known sightings are cultivated or near cultivated areas - e.g. parks. (1)
	6. Proportion of potential range occupied: Only a small fraction of the potential habitat available in WI is currently occupied. There are only 33 documented sightings in WI as of Dec. 2006, the majority of which are landscape plantings. (1)
II. Invasive in Similar Climate Zones	1. YES ☒ NO ☐ Where (include trends): MN,MI, NY, ME, Ontario, (2) (3) (6).
III. Invasive in Similar Habitat Types	1. Upland ☒ Wetland ☒ Dune ☐ Prairie ☒ Aquatic ☐ Forest ☒ Grassland ☒ Bog ☒ Fen ☒ Swamp ☒ Marsh ☐ Lake ☐ Stream ☐ Other: Seasonally moist pastures, wetland margins, floodplains, riverbanks, shores, irrigation ditches, overflow channels, roadsides, fencerows, and other disturbed sites. (4) (5) (6) (10)
IV. Habitat Effected	1. Soil types favored (e.g. sand, silt, clay, or combinations thereof, pH): Found in a wide range of soil types and moisture regimes, including bare mineral soil due to nitrogen fixing capabilities(4). Also tolerates high saline environments (8) and pH greater than 6 (9) (10).
	2. Conservation significance of threatened habitats: Riparian areas are important wildlife habitat. Oak Savanna communities are listed G1, G2, S1, S2 (11)
V. Native Habitat	1. List countries and native habitat types: Native to southern Europe to central and western Asia, and the western Himalays (6) (8). Usually found in riparian areas, coasts and other relatively moist habitats as well as some forest types (6).
VI. Legal Classification	1. Listed by government entities? Listed as Noxious by Colorado, New Mexico and several Utah counties, and banned as potentially invasive in Connecticut (2) (8).
	2. Illegal to sell? YES ☒ NO ☐ Notes: Colorado and Connecticut (2).
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: Some sources state 3-5 years (9) others have found the plants start producing fruit 7-10 years (6).
	3. Length of Seed Viability: 3 years under normal conditions(8) (10), however seed longevity in the field has not been documneted (6).
	4. Methods of Reproduction: Asexual ☒ Sexual ☒ Please note abundance of propagules and and other important information: Abundant fruit producer, with seeds that can germinate from fall to spring and on undisturbed soils (9). Russian olive can also sprout from stumps, stem cuttings and root pieces (8) (10).
	5. Hybridization potential: NA
II. Climate	1. Climate restrictions: -50 to 115 degrees F. 12-15 inches precip/year (6).
	2. Effects of potential climate change: NA
III. Dispersal Potential	1. Pathways - Please check all that apply: Intentional: Ornamental ☒ Forage/Erosion control ☒ Medicine/Food: Other: Wildlife food, wind breaks and shelterbelts(6) (9) Unintentional: Bird ☒ Animal ☒ Vehicles/Human ☐ Wind ☐ Water ☒ Other: (6) (8) (9) (10)
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: Tolerates a wide range of soil types, infrequent fire and flooding. Nitrogen fixing ability makes it competative on bare soils. Russian olive is not desired by beaver and young plants are tolerant of shade which gives it a competative advantages over native species. Also tolerant of high salinity and poor soil conditions. (6) (8) (9) (10)
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☒ LOW ☐
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: Susceptible to canker diseases and verticillium wilt. E. angustifolia is often killed by verticillium wilt in the humid mid-west (12)
	2. Competition with native species: Very competative with other early successional species (6) (8) (9) (10)
	3. Rate of Spread: HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☐ LOW (7-10 yrs) ☒ Notes: 30-50 years from cultivation to domination of an area noted from western infestations (9) (10)
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☒ NO ☐ Notes: In riparian type communities the change from large trees to a very closed canopy of small trees and shrubs. In openlands, savannas and woodlands, Russian olivfe will create a clossed

	canopy. (6) (8) (9) (10).
	2. Alteration of ecosystem/community structure? YES ☒ NO ☐ Notes: In riparian and forest communities the change from large trees to a very closed canopy of small trees and shrubs, In openlands, savannas, and woodlands Russian olive will create a closed canopy. (6) (8) (9) (10).
	3. Alteration of ecosystem/community functions and processes? YES ☒ NO ☐ Notes: Fixes nitrogen, interferes with nutrient sycling and has high rates of evotransporation which can change hydrologic regimes fire regimes (6) (8)(9)(10)
	4. Allelopathic properties? YES ☐ NO ☒ Notes:
D. SOCIO-ECONOMIC Effects	
I. Positive aspects of the species to the economy/society:	Notes: Has been used as a wind break/shelter belt tree, for wildlife habitat, and to stabilize stream banks. Since 1986 demand has decreased. Some use in honey production and as a landscape plant. (1) (2) (6) (8) (9) (10). Though once a commonly planted ornamental small tree in Wisconsin its popularity has waned due to its susceptibility to canker and certicillium wilt. Dryland plants like this are particularly subject to fungal diseases in the humid Lake States. The 2006 Wisconsin Nursery Association's Wholesale Source Book lists only 2 nurseries growing it in Wisconsin. (13)
II. Potential socio-economic effects of restricting use:	Notes: Very little effects of restricting use other than replacing it in shelterbelts, etc. A few examples of shrubs native to much of the eastern U.S. include spicebush (Lindera benzoin), witch hazel (Hamamelis virginiana), pawpaw (Asimina triloba), flowering dogwood (Cornus florida), Bursting-heart or strawberry-bush (Euonymus americanus) and arrowwood (Viburnum dentatum) (4).
III. Direct and indirect effects :	Notes: NA
IV. Increased cost to a sector:	Notes: Land owners and managers (and ultimately the taxpayers) will have pay the costs of control, education, etc.
V. Effects on human health:	Notes: Pollen can be very irritating to those with allergies.
E. CONTROL AND PREVENTION	
I. Costs of Prevention (including education; please be as specific as possible):	Notes: The plant is readily available for sale on the Internet, including Ebay. Those with nursery stock will be affected if a sales ban is immediately imposed.
II. Responsiveness to prevention efforts:	Notes: Moderate responsiveness. Small infestations can be eradicated, but large infestations are most economically treated by suppressing growth and limiting spread. (8)
III. Effective Control tactics:	Mechanical ☒ Biological ☐ Chemical ☒ Times and uses: Eradication of small patches is possible, however for large infestations containment and is more practical and economical. For smaller plants repeated mowing and tillage will control the plants and spread, though this is the most labor

	intensive method. Application of 2,4-D ester, triclopyr, 2,4-D + triclopyr, imazapyr, and glyphosate are all effective, however follow-up applications for several years are necessary control seedlings and resprouts. (8), (9).
IV. Minimum Effort:	Notes: Mechanical and chemical control for 2-3 years with a further monitoring and treeament effort of at least 2 more years is most effective and economical (8), (9).
V. Costs of Control:	Notes: NA
VI. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes: Since Russian olive is not widespread in Wisconsin, prevention is the most effective control method. Invasions of Russian olive into riparian areas already under threat from invasive species such as purple loosestrife and glossy buckthorn would needlessly stress such systems.
VII. Non-Target Effects of Control:	Notes: Mowing and tilling will have negative effects on native shrubs and trees, and broad leaf vegetation will be negatively effected by herbicides.
VIII. Efficacy of monitoring:	Notes: Prevention and control of new infestations is most effective. (8), (9).
IX. Legal and landowner issues:	Notes: NA

F. REFERENCES USED:

☒ UW Herbarium
☒ WI DNR
☒ TNC
☒ Native Plant Conservation Alliance
☐ IPANE
☒ USDA Plants

Number	Reference
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3	University of Maine Cooperative Extension Bulletin 2525. www.umext.maine.edu/onlinepubs/htmpubs/2525.htm
4	Muzika, Rose-Marie; and Swearingen, Jil M. 1997. PCA - Alien Plant Working Group - Russian Olive (Elaeagnus angustifolia). http://www.nps.gov/plants/alien/fact/elan1.htm
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10	Global Invasive Species Database, 2007. Elaeagnus angustifolia. Available from: http://www.issg.org/database/species/ecology.asp?si=216&fr=1&sts=sss [Accessed 26 February 2007].
11	WDNR Natural Heritage Inventory Working List. http://www.dnr.state.wi.us/org/land/er/wlist/
12	Gilman, Edward F., and Dennis G. Watson. ENH392, one of a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date November 1993. Revised December 2006. http://edis.ifas.ufl.edu/ST233#copy
13	Ed Hasselkus, UW Emeritus Horticulture Professor. Comments on Invasive Plant Classification 2007.

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