

NAME OF SPECIES: <i>Rubus armeniacus</i> Focke	
Synonyms: <i>R. discolor</i> Weihe & Nees, <i>R. hedycarpus</i> var. <i>armeniacus</i> (Focke) Focke, <i>R. procerus</i> auct. non P.J. Mull. Ex Genev	
Common Name: Himalayan blackberry, Himalaya giant blackberry, Himalaya-berry	Cultivars? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> 2. <u>Abundance:</u> None 3. <u>Geographic Range:</u> N/A 4. <u>Habitat Invaded:</u> Pastures, riparian areas, wastelands, fence lines, forest plantations, roadsides, creek gullies, river flats and right-of-ways (1, 2) Disturbed Areas <input checked="" type="checkbox"/> Undisturbed Areas <input checked="" type="checkbox"/> 5. <u>Historical Status and Rate of Spread in Wisconsin:</u> N/A 6. <u>Proportion of potential range occupied:</u> Low
II. Invasive in Similar Climate Zones	1. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <u>Where (include trends):</u> Western United States, Midwestern states including southern IL, Missouri, Arkansas and the southeastern US (1)
III. Invasive in Which Habitat Types	1. Upland <input type="checkbox"/> Wetland <input checked="" type="checkbox"/> Dune <input type="checkbox"/> Prairie <input checked="" type="checkbox"/> Aquatic <input type="checkbox"/> Forest <input checked="" type="checkbox"/> Grassland <input checked="" type="checkbox"/> Bog <input type="checkbox"/> Fen <input type="checkbox"/> Swamp <input checked="" type="checkbox"/> Marsh <input checked="" type="checkbox"/> Lake <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Other:
IV. Habitat Affected	1. <u>Soil types favored or tolerated:</u> Wet spots on both acidic and alkaline soils (2) 2. <u>Conservation significance of threatened habitats:</u> Forms dense thickets in wet areas, potentially inhibiting medium and large animals' access to water (2)
V. Native Range and Habitat	1. <u>List countries and native habitat types:</u> Western Europe (2)
VI. Legal Classification	1. <u>Listed by government entities?</u> WA and OR Noxious Weeds Lists (1) 2. <u>Illegal to sell?</u> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Notes: Cannot import to United States from other countries without special permit (4)
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. <u>Type of plant:</u> Annual <input type="checkbox"/> Biennial <input type="checkbox"/> Monocarpic Perennial <input type="checkbox"/> Herbaceous Perennial <input type="checkbox"/> Vine <input type="checkbox"/> Shrub <input checked="" type="checkbox"/> Tree <input type="checkbox"/> 2. <u>Time to Maturity:</u> Seeds cannot form until canes are at least one year old (2) 3. <u>Length of Seed Viability:</u> Unknown. At least "several years" according to an inaccessible study (2) 4. <u>Methods of Reproduction:</u> Asexual <input checked="" type="checkbox"/> Sexual <input checked="" type="checkbox"/> <u>Notes:</u> Spreads vegetatively through the formation of roots at cane apices, often associated with a daughter plant where canes are rooted. Adventitious shoots may form at the lateral roots, emerging at different angles and from great depths. <i>R. armeniacus</i> also spreads reproductively though the dispersal of seeds by animals eating fruit (2) A study lasting three years showed a 10%

	<p>germination rate (3) Plants produce copious fruit with copious seed (1000s per plant) (5).</p> <p>5. <u>Hybridization potential</u>: Unknown</p>
II. Climate	<p>1. <u>Climate restrictions</u>: Occurs in areas with an average of at least 76 cm of rain annually. When grown in dense shade, <i>R. armeniacus</i> usually cannot produce seeds. A study in Australia showed that only 44% of individuals could survive in dense shade (2, 3)</p> <p>2. <u>Effects of potential climate change</u>: Potentially, less suitable habitat available for <i>R. armeniacus</i> as conditions become hotter and drier. <i>R. armeniacus</i> needs at least 76 cm of rainfall a year and prefers wet riparian areas (2)</p>
III. Dispersal Potential	<p>1. <u>Pathways - Please check all that apply</u>:</p> <p><u>Unintentional</u>: Bird <input checked="" type="checkbox"/> Animal <input checked="" type="checkbox"/> Vehicles/Human <input type="checkbox"/> Wind <input type="checkbox"/> Water <input type="checkbox"/> Other:</p> <p><u>Intentional</u>: Ornamental <input checked="" type="checkbox"/> Forage/Erosion control <input type="checkbox"/> Medicine/Food: Other: Introduced as a cultivated crop (2)</p> <p>2. <u>Distinguishing characteristics that aid in its survival and/or inhibit its control</u>: Produces very dense thickets that are difficult to penetrate (2) Produces 1000s of fruit per plant (5).</p>
IV. Ability to go Undetected	<p>1. HIGH <input type="checkbox"/> MEDIUM <input checked="" type="checkbox"/> LOW <input type="checkbox"/> Most brambles can be difficult to identify. <i>R. armeniacus</i> differs from native blackberries in having whitish to grayish leaf undersides, flowers that are often pink to red (but also sometimes white), and large branching inflorescences (5).</p>
C. DAMAGE POTENTIAL	
I. Competitive Ability	<p>1. <u>Presence of Natural Enemies</u>: Herbivory by medium-sized browsers (or domesticated grazing animals like cattle, sheep and goats) can keep populations of <i>R. armeniacus</i> low (2)</p> <p>2. <u>Competition with native species</u>: Competition is low with native fast-growing shrubs and trees, as these will shade out individuals of the shade-intolerant <i>R. armeniacus</i> growing in small thickets. Native species easily outcompete seeds of <i>R. armeniacus</i> (2)</p> <p>2. <u>Rate of Spread</u>: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) <input type="checkbox"/> MEDIUM (4-6 yrs) <input checked="" type="checkbox"/> LOW (7-10 yrs) <input type="checkbox"/> Notes: First year plants cannot produce seeds and vegetatively reproduced plants are usually monocarpic (2)</p>
II. Environmental Effects	<p>1. <u>Alteration of ecosystem/community composition?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Patches of this bramble can displace native species in the area (5). May attract more small mammals and birds to sites with high infestations. Also displaces native species</p> <p>2. <u>Alteration of ecosystem/community structure?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Patches of this bramble influence the structure in the low</p>

	shrub layer, increasing its density (5). May change riparian habitats from ground layer herbs to shrub habitat
	3. <u>Alteration of ecosystem/community functions and processes?</u> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Notes: Different natural buffer zone than native riparian habitat
	4. <u>Allelopathic properties?</u> YES <input type="checkbox"/> NO <input type="checkbox"/> Notes: Unknown
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: Fruits can be harvested for consumption (4)
II. Potential Socio-Economic Effects of Requiring Controls:	Positive: Could improve stream quality by allowing native riparian habitats to reestablish. Potential impacts for fishing and tourism. Negative: Cost of control to landowners
III. Direct and indirect Socio-Economic Effects of Plant :	Notes: Could be used as a cultivated crop species. However, native blackberry species readily outcompete <i>R. armeniacus</i> (2)
IV. Increased Costs to Sectors Caused by the Plant::	Notes: Low, not a good competitor with crop species (2)
V. Effects on human health:	Notes: No known positive or negative impacts
VI. Potential socio-economic effects of restricting use:	Same potential effects as requiring controls
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes: Cost of consultation and control to landowners
II. Responsiveness to prevention efforts:	Notes: Good responsiveness with diligence and a mix of mechanical, biological and chemical methods (2)
III. Effective Control tactics: (provide only basic info)	Mechanical <input checked="" type="checkbox"/> Biological <input checked="" type="checkbox"/> Chemical <input checked="" type="checkbox"/> Times and uses: Mechanical: hand-pulling, digging or cutting entire individuals before seeds are produced. Mowing once when plants begin to flower but before seeds are produced may also be effective. Monitoring populations to ensure vegetative reproduction does not occur is necessary with mechanical means. Slash piles can be burned in order to avoid this. Entire populations can also be burned but need to be followed by either another burn, replanting of fast-growing shrubs or trees, or an herbicide treatment. Biological: grazing by cattle, sheep, goats, chickens Chemical: Spraying of herbicides when plants are in full leaf. Effectiveness increases in the summer after seeds are set. Usually requires more than one spraying to control adventitious shoots (2)
IV. Costs of Control:	Notes: No known information
V. Cost of prevention or control vs. Cost of allowing invasion to	Notes: Costs seem to be solely ecological, as <i>R. armeniacus</i> tends to be an easily controlled species

occur:	
VI. Non-Target Effects of Control:	Notes: Ability of native vegetation to reestablish, creating better riparian habitats in waterways. May improve stream quality to eradicate <i>R. armeniacus</i> . However, chemical controls used in riparian habitats may enter waterways (2)
VII. Efficacy of monitoring:	Notes: Monitoring is easy and very important, as species does not remain undetected easily but has the ability to spread vegetatively by several mechanisms (2)
VIII. Legal and landowner issues:	Notes: Unknown
F. HYBRIDS AND CULTIVARS AND VARIETIES	
I. Known hybrids? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Name of hybrid: Names of hybrid cultivars:
II. Species cultivars and varieties	Names of cultivars, varieties and any information about the invasive behaviors of each:
	Notes: Not many sources contain information about <i>R. armeniacus</i>

G. REFERENCES USED:

- UW Herbarium (Madison or Stevens Point)
 WI DNR
 Bugwood (Element Stewardship Abstracts)
 Native Plant Conservation Alliance
 IPANE
 USDA Plants

Number	Reference
1	Invasive.org. 2010. Invasive and Exotic Species Profiles. Accessed 11-13-2011. http://www.invasive.org/browse/subinfo.cfm?sub=6338
2	Bugwood Wiki. 2009. <i>Rubus armeniacus</i> . Accessed 11-13-2011. http://wiki.bugwood.org/Rubus_armeniacus
3	Amor, R.L. 1975b. Ecology and control of blackberry (<i>Rubus fruticosus</i> L. agg.): V. Control by picloram granules. <i>Weed Res.</i> 15:47-52
4	USDA Agricultural Research Service. 2010. The GRIN Database. Agriculture Research Service Headquarters, 1400 Independence Ave., S.W. Washington DC, 20250. Accessed 11-13-2011. http://www.ars-grin.gov/cor/cool/rub.aliens.html
5	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. http://www.newyorkinvasivespecies.org/PlantAssessments/Rubus.bifrons.NYS.pdf
6	Tree, shrub, vine species assessment group pre-screen meeting.

Author(s), Draft number, and date completed: Shannon Dillard, Draft 1, 11-13-2011

Reviewer(s) and date reviewed: Tom Boos, 11/18/11

Approved and Completed Date: 12/16/11