

<b>Taxon:</b> <i>Heteropterys glabra</i> Hook. & Arn.	<b>Family:</b> Malpighiaceae
<b>Common Name(s):</b> mariposa red wing vining maple	<b>Synonym(s):</b> <i>Banisteria tenuis</i> Lindl. <i>Heteropteris lanceolata</i> (L.) Fée ex <i>Heteropterys angustifolia</i> Griseb. <i>Heteropterys pseudoangustifolia</i>

<b>Assessor:</b> Chuck Chimera	<b>Status:</b> Assessor Approved	<b>End Date:</b> 12 May 2016
<b>WRA Score:</b> 7.0	<b>Designation:</b> H(HPWRA)	<b>Rating:</b> High Risk

**Keywords:** Tropical Liana, Naturalizing, Ornamental, Shade-Tolerant, Wind-Dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	?
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	y
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

**Supporting Data:**

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Grandtner, M.M. & Chevrette, J. (2012). Dictionary of Trees, Volume 2: South America: Nomenclature, Taxonomy and Ecology. Academic Press, New York	No evidence
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	NA
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	"Native: Southern America Brazil: Brazil - Rio Grande do Sul Southern South America: Argentina - Chaco, - Corrientes, - Entre Rios, - Formosa, - Misiones, - Santa Fe; Paraguay; Uruguay"
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Pender Nursery. 2016. <i>Heteropterys glabra</i> . <a href="http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra">http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra</a> . [Accessed 12 May 2016]	"Hardiness: 7b-10"

Qsn #	Question	Answer
	Dave's Garden. 2016. Red Wing - <i>Heteropterys glabra</i> . <a href="http://davesgarden.com/guides/pf/go/116859/">http://davesgarden.com/guides/pf/go/116859/</a> . [Accessed 12 May 2016]	"Hardiness: USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F)"
	Tropicos.org. 2016. Tropicos [Online Database]. Missouri Botanical Garden. <a href="http://www.tropicos.org/">http://www.tropicos.org/</a> . [Accessed 12 May 2016]	Collected from 50 m - 300 m

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	"Native: Southern America Brazil: Brazil - Rio Grande do Sul Southern South America: Argentina - Chaco, - Corrientes, - Entre Rios, - Formosa, - Misiones, - Santa Fe; Paraguay; Uruguay"

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	Dave's Garden. 2016. Red Wing - <i>Heteropterys glabra</i> . <a href="http://davesgarden.com/guides/pf/go/116859/">http://davesgarden.com/guides/pf/go/116859/</a> . [Accessed 12 May 2016]	"This plant has been said to grow in the following regions: Anniston, Alabama Fort Worth, Texas Lake Jackson, Texas Mansfield, Texas Plano, Texas"
	WRA Specialist. 2016. Personal Communication	Grown as an ornamental, but unclear how widely it has been cultivated

301	Naturalized beyond native range	y
	Source(s)	Notes
	Parker, J. 2016. BIISC Early Detection Botanist. Pers. Comm. 10 May	" <i>Heteropterys glabra</i> and <i>brachiata</i> ( we found one of these naturalizing, probably <i>glabra</i> , still waiting on BISH)"
	Office of Everglades Restoration. (2014). Integrated Financial Plan. U.S. Department of the Interior, Davie, FL. <a href="http://www.evergladesrestoration.gov/">http://www.evergladesrestoration.gov/</a> . [Accessed 12 May 2016]	[ <i>Heteropterys glabra</i> included as a rapid response species. Potentially invasive] "ECISMA will continue to coordinate, assess and respond to new invasive species, using the ECISMA EDRR plan as a framework. Invasive species assessed will have been reported to ECISMA via EDDMapS or 1-888-Ive Got 1. The invasive species that are currently considered priority rapid response candidates: <i>Bruguiera gymnorrhiza</i> , <i>Chrysopogon aciculatus</i> , <i>Dalchampia scandens</i> , <i>Heteropterys glabra</i> <i>Petenia splendida</i> "
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Office of Everglades Restoration. (2014). Integrated Financial Plan. U.S. Department of the Interior, Davie, FL. <a href="http://www.evergladesrestoration.gov/">http://www.evergladesrestoration.gov/</a> . [Accessed 12 May 2016]	[ <i>Heteropterys glabra</i> included as a rapid response species. Potentially invasive] "ECISMA will continue to coordinate, assess and respond to new invasive species, using the ECISMA EDRR plan as a framework. Invasive species assessed will have been reported to ECISMA via EDDMapS or 1-888-Ive Got 1. The invasive species that are currently considered priority rapid response candidates: <i>Bruguiera gymnorrhiza</i> , <i>Chrysopogon aciculatus</i> , <i>Dalchampia scandens</i> , <i>Heteropterys glabra</i> <i>Petenia splendida</i> "
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

305	Congeneric weed	y
	Source(s)	Notes
	FLEPPC Plant List Committee. 2015. Documentation of the Criteria used in Determination of Category I and Category II Invasive Species. Species name: <i>Heteropterys brachiata</i> . <a href="http://www.fleppc.org/list/2015/criteria_Heteropterys_brachiata.pdf">www.fleppc.org/list/2015/criteria_Heteropterys_brachiata.pdf</a>	[Proposed Category I weed. Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.] "Native plant diversity suppressed in understory. Species that would normally be in hammock understory include seedlings/saplings of native trees like wild <i>Psychotria</i> spp., <i>Sideroxylon foetidissimum</i> , <i>Prunus myrtifolia</i> , <i>Coccoloba diversifolia</i> , etc., in addition to vines such as <i>Chiococca alba</i> and <i>Pisonia aculeata</i> . Hammocks generally do not have many understory herbs but ones that would normally be present in these redwing-invaded hammocks include ferns (e.g. <i>Thelypteris</i> spp) and a few grasses (eg. <i>Oplismenus hirtellus</i> )." ... "Additional Comments: Present on at least 10 private properties in the vicinity of Castellow Hammock in Miami's Redland area. Some infestations are extremely dense, and have been out-of-control for decades, according to locals. Seeds are wind-dispersed. May have been introduced prior to 1967 from Colombia, by David Fairchild (see link to label under supporting documents)."

Qsn #	Question	Answer
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. Malpighiaceae. <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	[No evidence. Generic description] "Woody vines, shrubs, or small trees; stipules very small, distinct, triangular, persistent, borne on edge of petiole at its base or on stem beside petiole, or absent; leaves opposite or very rarely alternate or whorled, usually bearing glands on petiole or lamina or both."

402	Allelopathic	n
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

403	Parasitic	n
	Source(s)	Notes
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. Malpighiaceae. <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	"Woody vines, shrubs, or small trees" [Generic description. Malpighiaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes
	Huerta-Reyes, M., Juárez R. M. F., & Aguilar-Rojas, A. (2015). <i>Heteropterys</i> Genus: A Review of its Phytochemistry and Pharmacology. <i>International Journal of Pharmacology</i> 11(6): 523-531	[Related taxon considered non-toxic] "Heteropterys brachiata ... In the acute toxicity test, the extract could be considered as safe, since no deaths were observed in mice treated orally with 2000 mg kgG1."
	Quattrocchi, U. 2012. <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	n
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

Qsn #	Question	Answer
407	<b>Causes allergies or is otherwise toxic to humans</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Huerta-Reyes, M., Juárez R. M. F., & Aguilar-Rojas, A. (2015). <i>Heteropterys</i> Genus: A Review of its Phytochemistry and Pharmacology. <i>International Journal of Pharmacology</i> 11(6): 523-531	[Related taxon considered non-toxic] "Heteropterys brachiata ... In the acute toxicity test, the extract could be considered as safe, since no deaths were observed in mice treated orally with 2000 mg kgG1."
	Quattrocchi, U. 2012. <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	No evidence

408	<b>Creates a fire hazard in natural ecosystems</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown. As a vine, could act as a fuel ladder into trees

409	<b>Is a shade tolerant plant at some stage of its life cycle</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	JC Raulston Arboretum at NC State University. 2016. <i>Heteropterys glabra</i> . <a href="https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3">https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3</a> . [Accessed 12 May 2016]	"Planting <i>Heteropterys</i> in a sunny spot ensures the best flower and fruit show but it will grow well in a shadier location. It may need some training to grow up a structure when young or it can be planted under a low branched tree."
	Dave's Garden. 2016. Red Wing - <i>Heteropterys glabra</i> . <a href="http://davesgarden.com/guides/pf/go/116859/">http://davesgarden.com/guides/pf/go/116859/</a> . [Accessed 12 May 2016]	"Sun Exposure: Full Sun Sun to Partial Shade"

410	<b>Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	JC Raulston Arboretum at NC State University. 2016. <i>Heteropterys glabra</i> . <a href="https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3">https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3</a> . [Accessed 12 May 2016]	"It tolerates considerable drought and root competition once established but will be more prolific in a slightly moist, well-drained soil."
	Pender Nursery. 2016. <i>Heteropterys glabra</i> . <a href="http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra">http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra</a> . [Accessed 12 May 2016]	"Soil: well drained soils"
	Johnson Nursery. (2016). Red Wing. <a href="http://www.johnson-nursery.com/plant-nursery/plant/redwing/id/2140404">http://www.johnson-nursery.com/plant-nursery/plant/redwing/id/2140404</a> . [Accessed 12 May 2016]	"Tolerates a wide variety of soils."

411	<b>Climbing or smothering growth habit</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	JC Raulston Arboretum at NC State University. 2016. <i>Heteropterys glabra</i> . <a href="https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3">https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3</a> . [Accessed 12 May 2016]	"Redwing is a woody vine that will grow up a support or through the lower branches of small trees or large shrubs. The stems will twine gently providing support for the upright growth. Without support, it will make a mounded, shrubby plant with branches weaving through its neighbors. "
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. <i>Malpighiaceae</i> . <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	"Woody vines, shrubs, or small trees" [Generic description]

<b>412</b>	<b>Forms dense thickets</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Climbing habit

<b>501</b>	<b>Aquatic</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. <i>Malpighiaceae</i> . <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	[Terrestrial] "Woody vines, shrubs, or small trees"

<b>502</b>	<b>Grass</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	"Family: Malpighiaceae"

<b>503</b>	<b>Nitrogen fixing woody plant</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	"Family: Malpighiaceae"

<b>504</b>	<b>Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. <i>Malpighiaceae</i> . <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	"Woody vines, shrubs, or small trees; stipules very small, distinct, triangular, persistent, borne on edge of petiole at its base or on stem beside petiole, or absent; leaves opposite or very rarely alternate or whorled, usually bearing glands on petiole or lamina or both."

<b>601</b>	<b>Evidence of substantial reproductive failure in native habitat</b>	<b>n</b>
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Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	USDA, ARS, Germplasm Resources Information Network, 2016. National Plant Germplasm System [Online Database]. <a href="http://www.ars-grin.gov/npgs/index.html">http://www.ars-grin.gov/npgs/index.html</a> . [Accessed 12 May 2016]	[No evidence] "Native: Southern America Brazil: Brazil - Rio Grande do Sul Southern South America: Argentina - Chaco, - Corrientes, - Entre Rios, - Formosa, - Misiones, - Santa Fe; Paraguay; Uruguay"

602	<b>Produces viable seed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	"It reproduces by seeds and multiplies by cuttings."

603	<b>Hybridizes naturally</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown

604	<b>Self-compatible or apomictic</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Sigrist, M. R., & Sazima, M. (2004). Pollination and reproductive biology of twelve species of neotropical Malpighiaceae: stigma morphology and its implications for the breeding system. <i>Annals of Botany</i> , 94(1), 33-41	[Unknown for <i>H. glabra</i> ] "In neotropical Malpighiaceae, self-incompatibility has been reported for <i>Byrsonima coccolobifolia</i> (Barros, 1992), <i>B. sericea</i> (Teixeira and Machado, 2000), <i>Camarea af<sup>®</sup>nis</i> , <i>Heteropterys</i> sp. (A. A. A. Barbosa, pers. comm.) and <i>Spachea membranacea</i> (Steiner, 1985), but the category of incompatibility has not been determined yet (cf. Seavey and Bawa, 1986)."

605	<b>Requires specialist pollinators</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	"It blooms from spring to autumn and pollination occurs by insects (insect pollination)"

606	<b>Reproduction by vegetative fragmentation</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	"It reproduces by seeds and multiplies by cuttings." [Unknown]

607	<b>Minimum generative time (years)</b>	
	<b>Source(s)</b>	<b>Notes</b>

Qsn #	Question	Answer
	Pender Nursery. 2016. <i>Heteropterys glabra</i> . <a href="http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra">http://www.pendernursery.com/Plant-Guide/Woody-Ornamentals/Heteropterys-glabra</a> . [Accessed 12 May 2016]	"Growth Rate: fast"

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. Malpighiaceae. <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	[Adapted for wind dispersal] "Fruit dry, breaking apart into 3 samaras or mericarps separating from a short pyramidal torus; samara with its largest wing dorsal, thickened on the abaxial (lower) edge and (in most species) bent upward, the veins terminating in the thinner adaxial edge; much shorter winglets or crests present on the sides of the nut in some species; dorsal wing rudimentary or lost in a few species; carpophore absent."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	JC Raulston Arboretum at NC State University. 2016. <i>Heteropterys glabra</i> . <a href="https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3">https://jcra.ncsu.edu/horticulture/plant-profiles/details.php?ID=3</a> . [Accessed 12 May 2016]	[Cultivated as an ornamental] "One plant native to the area where southern Brazil, northern Argentina, Paraguay, and Uruguay meet has proven to be an exceptional garden plant in warm temperate gardens." ... "Gold flowers appear by early summer in bright sprays followed quickly by brilliant red fruits that closely resemble maple keys. Redwing will continue to produce flowers alongside the fruit into the fall for a continuous hot combination. The foliage on this vine emerges flushed with burgundy before turning glossy green. The multihued flower and fruit display make this a worthy candidate for any garden."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Freitas, T. G., de Souza, C. S., Aoki, C., Arakaki, L. M. M., Stefanello, T. H., Sartori, Â. L. B., & Sigrist, M. R. (2013). Flora of Brazilian humid Chaco: composition and reproductive phenology. <i>Check List</i> , 9(5), 973-979	"Table 1. Habit, life form and characteristics of flowering and fruiting phenology of the plant species sampled in a remnant of humid Chaco (Arborized Stepic Savanna), Porto Murtinho municipality, Mato Grosso do Sul State, Brazil, from August 2010 to June 2011." [Heteropterys glabra - Dispersal syndrome = ANEMO = anemochory]

705	Propagules water dispersed	
	Source(s)	Notes

Qsn #	Question	Answer
	Anderson, W. R., Anderson, C. & Davis, C. C. 2006—. Malpighiaceae. <a href="http://herbarium.lsa.umich.edu/malpigh/index.html">http://herbarium.lsa.umich.edu/malpigh/index.html</a> . [Accessed 12 May 2016]	[Adapted for wind dispersal. Buoyancy of samaras unknown] "Fruit dry, breaking apart into 3 samaras or mericarps separating from a short pyramidal torus; samara with its largest wing dorsal, thickened on the abaxial (lower) edge and (in most species) bent upward, the veins terminating in the thinner adaxial edge; much shorter winglets or crests present on the sides of the nut in some species; dorsal wing rudimentary or lost in a few species; carpophore absent."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	"Samaras with two reddish dorsal wings resembling a butterfly, hence its common name, become brown at maturity. Are between 2-2.5 cm long and bear fruit in summer and autumn. The fruits are dispersed by the wind (anemocorous dispersion)."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	[No means of external attachment] "Samaras with two reddish dorsal wings resembling a butterfly, hence its common name, become brown at maturity. Are between 2-2.5 cm long and bear fruit in summer and autumn. The fruits are dispersed by the wind (anemocorous dispersion)."

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Flora Nativa. (2016). <i>Heteropterys glabra</i> . <a href="http://www.revistabiomas.com/dos/flora.html">http://www.revistabiomas.com/dos/flora.html</a> . [Accessed 12 May 2016]	[Seeds unlikely to be consumed] "Samaras with two reddish dorsal wings resembling a butterfly, hence its common name, become brown at maturity. Are between 2-2.5 cm long and bear fruit in summer and autumn. The fruits are dispersed by the wind (anemocorous dispersion)."

801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2016) Seed Information Database (SID). Version 7.1. <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a> . [Accessed 12 May 2016]	"Storage Behaviour: No data available for species or genus. Of 8 known taxa of family MALPIGHIACEAE, 87.50% Orthodox(p?), 12.50% Recalcitrant(?)"

803	Well controlled by herbicides	n

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

<b>804</b>	<b>Tolerates, or benefits from, mutilation, cultivation, or fire</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown

<b>805</b>	<b>Effective natural enemies present locally (e.g. introduced biocontrol agents)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2016. Personal Communication	Unknown

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- Grows in tropical climates
- Naturalizing on Hawaii Island, & Florida (confirmation needed)
- Targeted for control in Florida (a rapid response candidate)
- Other *Heteropterys* species are regarded as weeds
- Shade tolerant
- Tolerates many soil types
- Climbing & smothering growth habit
- Reproduces by seeds
- Seeds dispersed by wind & intentionally by people
- Limited ecological information reduces accuracy of risk prediction

Low Risk Traits

- Limited reports of invasiveness or naturalization, but limited evidence of widespread introduction outside native range
- Unarmed (no spines, thorns or burrs)
- Ornamental