

**Family:** *Salicaceae*

**Taxon:** *Xylosma congesta*

**Synonym:** *Myroxylon senticosum (Hance) Warb.*  
*Xylosma japonica A. Gray*  
*Xylosma racemosa Miq.*  
*Xylosma senticosa Hance*

**Common Name:** shiny xylosma  
 spiny xylosma  
 zuo mu

Questionnaire :	current 20090513	Assessor:	Assessor	Designation:	EVALUATE
Status:	Assessor Approved	Data Entry Person:	Assessor	WRA Score	<b>6</b>
101	Is the species highly domesticated?		y=-3, n=0		n
102	Has the species become naturalized where grown?		y=1, n=-1		
103	Does the species have weedy races?		y=1, n=-1		
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		y
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		y
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)		
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		n
401	Produces spines, thorns or burrs		y=1, n=0		y
402	Allelopathic		y=1, n=0		
403	Parasitic		y=1, n=0		n
404	Unpalatable to grazing animals		y=1, n=-1		n
405	Toxic to animals		y=1, n=0		n
406	Host for recognized pests and pathogens		y=1, n=0		
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		n
408	Creates a fire hazard in natural ecosystems		y=1, n=0		n
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	n
412	Forms dense thickets	y=1, n=0	
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	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m <sup>2</sup> )	y=1, n=-1	
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: EVALUATE

WRA Score 6

## Supporting Data:

101	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Is the species highly domesticated? No evidence]
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Species suited to tropical or subtropical climate(s) 2-High] "Native: ASIA-TEMPERATE China: China - Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan Eastern Asia: Japan - Honshu, Kyushu, Ryukyu Islands, Shikoku; Korea; Taiwan ASIA-TROPICAL Indian Subcontinent: India - Uttar Pradesh"
202	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Quality of climate match data 2-High]
203	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Broad climate suitability (environmental versatility)? Yes] "Will grow in most climates and will grow in Perth..."
203	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Broad climate suitability (environmental versatility)? Yes. Temperate and tropical] "Native: ASIA-TEMPERATE China: China - Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan Eastern Asia: Japan - Honshu, Kyushu, Ryukyu Islands, Shikoku; Korea; Taiwan ASIA-TROPICAL Indian Subcontinent: India - Uttar Pradesh"
204	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native: ASIA-TEMPERATE China: China - Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan Eastern Asia: Japan - Honshu, Kyushu, Ryukyu Islands, Shikoku; Korea; Taiwan ASIA-TROPICAL Indian Subcontinent: India - Uttar Pradesh"
205	1999. Harper-Lore, B./Wilson, M.. Roadside Use of Native Plants. Island Press, Washington, D.C.	[Does the species have a history of repeated introductions outside its natural range? Yes] "...Xylosma ( <i>Xylosma congestum</i> ), an evergreen or deciduous shrub, commonly used for ornamental and hedge planting in California and other western states is not known to spread."
301	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Naturalized beyond native range? Yes] " <i>Xylosma congestum</i> Merr. Flacourtiaceae Cultivated 101-N" [N = Naturalized]
301	2013. Bayou Preservation Association. The Invasive, Exotic "Dirty Dozens". BPA, Houston, TX <a href="http://www.bayoupreservation.org/html/Invasives_exotics.pdf">www.bayoupreservation.org/html/Invasives_exotics.pdf</a>	[Naturalized beyond native range? Yes] "What follows are examples of the plants and animals that are invading, infesting, and damaging Houston's bayous and creeks. Many of these species were deliberately introduced and others by accident from the nursery and landscape trade and the aquarium trade." ... "Shiny <i>Xylosma</i> – <i>Xylosma congestum</i> ... Invasive, Exotic Shrub to Small Tree"
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No evidence]
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No evidence]
304	2013. Bayou Preservation Association. The Invasive, Exotic "Dirty Dozens". BPA, Houston, TX <a href="http://www.bayoupreservation.org/html/Invasives_exotics.pdf">www.bayoupreservation.org/html/Invasives_exotics.pdf</a>	[Environmental weed? Unknown. Impacts unspecified] "What follows are examples of the plants and animals that are invading, infesting, and damaging Houston's bayous and creeks. Many of these species were deliberately introduced and others by accident from the nursery and landscape trade and the aquarium trade." ... "Shiny <i>Xylosma</i> – <i>Xylosma congestum</i> ... Invasive, Exotic Shrub to Small Tree"

305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No] <i>Xylosma flexuosa</i> - naturalized
401	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Produces spines, thorns or burrs? Yes] "Shrubs or small trees, evergreen, 4–15 m tall; bark brown gray; branches spiny when young, unarmed when old, glabrous or puberulous. Stipules subulate, minute, ca. 0.3 mm, glabrous, in dried material dark brown or blackish, caducous or persistent for some time; petiole short, 2–5 mm, glabrous to quite densely pubescent with spreading hairs; leaf blade broadly ovate to ovate-elliptic, 3–8 × 2.5–3.5 cm, leathery, often glaucous below, both surfaces glabrous, or scarcely pubescent along veins below, lateral veins 3 or 4 (or 5) pairs, base usually obtuse to rounded, less often acute, margin serrate, apex acute, tip usually acuminate, acumen 5–10 mm."
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Parasitic? No] "Shrubs or small trees, evergreen, 4–15 m tall"
404	2010. Kleiman, D.G./Thompson, K.V./Baer, C.K.. Wild Mammals in Captivity: Principles and Techniques for Zoo Management, Second Edition. University of Chicago Press, Chicago, IL	[Unpalatable to grazing animals? No, although spines could deter browsing on plants] "Table 9.4. Nutrient composition of some browse used to feed mammals in captivity (dry-matter basis)" [ <i>Xylosma congestum</i> fed to animals]
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No evidence]
405	2010. Kleiman, D.G./Thompson, K.V./Baer, C.K.. Wild Mammals in Captivity: Principles and Techniques for Zoo Management, Second Edition. University of Chicago Press, Chicago, IL	[Toxic to animals? No evidence] "Table 9.4. Nutrient composition of some browse used to feed mammals in captivity (dry-matter basis)" [ <i>Xylosma congestum</i> fed to animals]
406	2004. Dreistadt, S.H.. Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide. UCANR Publications, Oakland, CA	[Host for recognized pests and pathogens? Possibly] " <i>Xylosma</i> rust. <i>Melampsora medusae</i> . Fungal disease favored by wet foliage." ... "Armillaria root rot. Present in many soils. Favored by warm, wet soil. Persists for years in infected roots." ... "Giant whitefly. Adults are tiny, whitish, mothlike insects. Nymphs and pupae are flattened, oval, translucent, and greenish or yellow." ... "Spider mites, <i>Tetranychus</i> spp. Tiny, often green, pink, or red pests; may have 2 dark spots."
406	2004. Odenwald, N.G./Fryling, C.F./Pope, T.E.. Plants for American Landscapes. LSU Press, Baton Rouge, LA	[Host for recognized pests and pathogens? No evidence] "...insect- and disease-free and drought-tolerant."
406	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Host for recognized pests and pathogens? No evidence] "Pest and disease free"
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No evidence]
408	2005. Kent, D.. Firescaping: creating fire-resistant landscapes, gardens, and properties in California's diverse environments. Wilderness Press, Berkeley, CA	[Creates a fire hazard in natural ecosystems? No evidence. Recommended plant for creating fire-resistant landscapes]
408	2007. Schultz, D.. Fire Resistant Plants. The Water Conservation Garden, El Cajon, CA <a href="http://www.thegarden.org/siteDocs/resources/FireResistivePlants.pdf">www.thegarden.org/siteDocs/resources/FireResistivePlants.pdf</a>	[Creates a fire hazard in natural ecosystems? No evidence] "The following fire resistant plants are located throughout the Water Conservation Garden. They should be considered when landscaping around your home. By replacing highly flammable vegetation with these recommended species, you can significantly improve the survivability of your home when a wildfire threatens. These plants should not be planted in continuous beds, but should be separated to prevent fire spread. To maintain their fire resistance they need to be watered and pruned to remove dead leaves and branches. Routine care and maintenance will provide you with an attractive defensible space against wildfire." [Includes <i>Xylosma congestum</i> ]
409	2005. Burke, D.. The complete Burke's backyard: the ultimate book of fact sheets. Murdoch Books, Millers Point, Australia	[Is a shade tolerant plant at some stage of its life cycle?] "Sun or semi-shade"

409	2013. Martin, C.A.. Virtual Library of Phoenix Landscape Plants - <i>Xylosma congestum</i> . Arizona State University, <a href="http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/xylosmacongestum.html">http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/xylosmacongestum.html</a> [Accessed 24 Nov 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Light: Full sun to nearly full shade. Eastern and northern exposures best in Phoenix"
410	2013. Learn 2 Grow. <i>Xylosma congestum</i> . <a href="http://www.learn2grow.com/plants/xylosmacongestum/">http://www.learn2grow.com/plants/xylosmacongestum/</a> [Accessed 24 Nov 2013]	[Tolerates a wide range of soil conditions? Yes] "This heat-tolerant shrub does well in full to partial sun in most any soil."
411	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Climbing or smothering growth habit? No] "Shrubs or small trees, evergreen, 4–15 m tall"
412	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Forms dense thickets? Unknown] "Forest margins, thickets on hills, plains, surrounding villages" [Possibly a component of thicket vegetation. Unknown if it forms monotypic thickets]
412	2010. Zmarzty, S.. <i>Xylosma congesta</i> (Lour.) Merr. (Salicaceae) the correct name for the species otherwise known as <i>X. japonica</i> or <i>X. racemosa</i> . <i>Taxon</i> . 59(1): 289-290.	[Forms dense thickets? Unknown] " <i>Xylosma congesta</i> occurs naturally on plains, in thickets and along forest margins in India (rare), western China, Japan and Korea..."
501	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Aquatic? No] "Forest margins, thickets on hills, plains, surrounding villages; 500–1100 m"
502	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Grass? No] "Salicaceae. Also placed in: Flacourtiaceae"
503	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Nitrogen fixing woody plant? No] "Salicaceae. Also placed in: Flacourtiaceae"
504	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Shrubs or small trees, evergreen, 4–15 m tall; bark brown gray; branches spiny when young, unarmed when old, glabrous or puberulous."
601	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Evidence of substantial reproductive failure in native habitat? No evidence] "Forest margins, thickets on hills, plains, surrounding villages"
602	2006. Master Gardeners of the University of Arizona Pima County Cooperative Extension. <i>Xylosma congestum</i> . <a href="http://ag.arizona.edu/pima/gardening/aridplants/Xylosma_congestum.html">http://ag.arizona.edu/pima/gardening/aridplants/Xylosma_congestum.html</a> [Accessed 24 Nov 2013]	[Produces viable seed? Presumably Yes] "Propagation: not well known, seed "
602	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Produces viable seed? Presumably Yes] "Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath."
603	2013. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Self-compatible or apomictic? Probably No] "Shrubs or small trees, usually dioecious, rarely polygamous"
605	2007. Nicolson, S.W./Nepi, M./Pacini, E.. Nectaries and Nectar. Springer, Dordrecht, The Netherlands	[Requires specialist pollinators? No] "In Salicaceae (including most Flacourtiaceae), some taxa present reduced flowers, lack nectaries, and are wind-pollinated (e.g., <i>Populus</i> , <i>Xylosma</i> , Cronquist, 1981; Bullock, 1994)."
605	2013. Learn 2 Grow. <i>Xylosma congestum</i> . <a href="http://www.learn2grow.com/plants/xylosmacongestum/">http://www.learn2grow.com/plants/xylosmacongestum/</a> [Accessed 24 Nov 2013]	[Requires specialist pollinators? Presumably No] "The inconspicuous fragrant yellowish flowers appear in late summer. They are popular with bees, so beware of planting adjacent to outdoor living areas."

606	2006. Master Gardeners of the University of Arizona Pima County Cooperative Extension. <i>Xylosma congestum</i> . <a href="http://ag.arizona.edu/pima/gardening/aridplants/Xylosma_congestum.html">http://ag.arizona.edu/pima/gardening/aridplants/Xylosma_congestum.html</a> [Accessed 24 Nov 2013]	[Reproduction by vegetative fragmentation? No evidence] "Propagation: not well known, seed"
607	2004. Odenwald, N.G./Fryling, C.F./Pope, T.E.. <i>Plants for American Landscapes</i> . LSU Press, Baton Rouge, LA	[Minimum generative time (years)?] "In full sunlight and a well-drained soil, the plant is fast-growing and makes an excellent screen..."
607	2013. Dave's Garden. PlantFiles: <i>Xylosma - Xylosma congesta</i> . <a href="http://davesgarden.com/guides/pf/go/66353/">http://davesgarden.com/guides/pf/go/66353/</a> [Accessed 24 Nov 2013]	[Minimum generative time (years)? Suggests 4+ years] "I want to say I love the shrub, however it takes forever to get the darn thing to grow to a sizable shrub so you can make a clipped hedge. They are quite picturesque when sheared into any shape. I recommend getting a larger plant or growing old waiting for it to be large enough."
701	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No evidence] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath." [No evidence, although berries and seeds are small enough that they could theoretically adhere to mud on shoes, tires, or other equipment]
702	2008. Kobayashi, K./Criley, R./Kaufman, A./Tsugawa, S./Ricordi, A./Clifford, P.. <i>Barrier Plants</i> . L-20. College of Tropical Agriculture and Human Resources (CTAHR, Honolulu, HI <a href="http://www.ctahr.hawaii.edu/freepubs">http://www.ctahr.hawaii.edu/freepubs</a>	[Propagules dispersed intentionally by people? Yes] "Spiny <i>xylosma - Xylosma congestum</i> , Flacourtiaceae. Shrub or small tree growing up to 15 feet high with sharp, slender, axillary thorns. Leaves are simple, shiny bright green, serrate margin, oval, pointed at tip; new growth is bronze or reddish. It has off-white colored flowers and black round berries. It grows in full sun to partial shade and can be used as a hedge."
703	2013. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No evidence] Unlikely. Often grown as a barrier plant but not typically grown with produce, and most popular gardening sites suggest that seed availability is limited.
704	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules adapted to wind dispersal? No] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath."
705	2003. Kominami, Y. et al.. Classification of bird-dispersed plants by fruiting phenology, fruit size, & growth form in a primary lucidophyllous forest: an analysis, with implications for the conservation of fruitbird interactions. <i>Ornithol. Sci.</i> 2: 3–23.	[Propagules water dispersed? No evidence] "Appendix 2. Traits and abundance of 111 endozoochorous plant species in the Aya Research Site." [Includes <i>Xylosma congestum</i> ]
705	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules water dispersed? No evidence] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent." ... "Forest margins, thickets on hills, plains, surrounding villages" [Fruit morphology and distribution suggest water is not an important dispersal vector]
706	2003. Kominami, Y. et al.. Classification of bird-dispersed plants by fruiting phenology, fruit size, & growth form in a primary lucidophyllous forest: an analysis, with implications for the conservation of fruitbird interactions. <i>Ornithol. Sci.</i> 2: 3–23.	[Propagules bird dispersed? Yes] "Appendix 2. Traits and abundance of 111 endozoochorous plant species in the Aya Research Site." [Includes <i>Xylosma congestum</i> ]
706	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). <i>Flora of China</i> . Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules bird dispersed? Yes. Fleshy-fruited] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath."
707	2003. Kominami, Y. et al.. Classification of bird-dispersed plants by fruiting phenology, fruit size, & growth form in a primary lucidophyllous forest: an analysis, with implications for the conservation of fruitbird interactions. <i>Ornithol. Sci.</i> 2: 3–23.	[Propagules dispersed by other animals (externally)? No] "Appendix 2. Traits and abundance of 111 endozoochorous plant species in the Aya Research Site." [Includes <i>Xylosma congestum</i> ]

707	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules dispersed by other animals (externally)? No] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath." [Fruits and seeds lack means of external attachment, and morphology suggests adaptations for fruit consumption and internal dispersal of seeds]
708	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Propagules survive passage through the gut? Presumably Yes. Fleshy-fruited] "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath."
801	2007. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 13 (Clusiaceae through Araliaceae). Science Press and Missouri Botanical Garden Press, Beijing & St. Louis	[Prolific seed production(>1000/m2)? Unknown] "Shrubs or small trees, evergreen, 4–15 m tall" ... "Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath."
801	2013. WRA Specialist. Personal Communication.	[Prolific seed production(>1000/m2)? Unknown] Availability of seeds appears to be somewhat limited in cultivation, suggesting seed set may not be high outside native range
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a>	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown. No information on seed storage of <i>Xylosma</i> spp]
803	2013. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2010. Reich, L.. The Pruning Book. Taunton Press, Newtown, CT	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Xylosma is a most adaptable plant - you can prune it to be a single - or multitrunked small tree, an espalier, a creeping ground cover, a formal or informal hedge, even a living sculpture. Whatever your goal, prune as severely as necessary just before growth begins,"
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

## **Summary of Risk Traits**

### **High Risk / Undesirable Traits**

- Mostly temperate but can grow in tropical climates
- Broad climate suitability
- Reported to be invading Houston's bayous and creeks
- Branches spiny when young
- Shade tolerant
- Tolerates many soil types
- Fleshy-fruited berries presumably adapted for dispersal by birds and other frugivorous animals
- Tolerates severe pruning

### **Low Risk Traits**

- Popular ornamental plant in mainland US with limited reports of escape or invasiveness
- Palatable to browsing animals
- Non-toxic
- Promoted for use in fire resistant landscapes
- Missing information on biology and ecology makes accurate risk prediction difficult