

Taxon: Magnolia tripetala	Family: Magnoliaceae
Common Name(s): umbrella magnolia umbrella tree	Synonym(s): Magnolia frondosa Salisb. Magnolia michauxii Fraser ex Thouin Magnolia umbellata Steud.

Assessor: Assessor	Status: Assessor Approved	End Date: 21 May 2014
WRA Score: 0.0	Designation: L	Rating: Low Risk

Keywords: Escapes cultivation, Temperate Tree, Unarmed, Ornamental, Bird-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)	Intermediate
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)		
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	n
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	n
301	Naturalized beyond native range		
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)	n
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	y=1, n=-1	n
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	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	n
411	Climbing or smothering growth habit	y=1, n=0	n
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	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	y
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
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	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed		
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 ²)		
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	y=1, n=-1	y
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
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	No evidence

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	Intermediate
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	"Rich woods and ravines, mainly in uplands, rarely coastal plain; 0-1065m; Ala., Ark., Fla., Ga., Ind., Ky., Md., Miss., N.C., Ohio, Okla., Pa., S.C., Tenn., Va., W.Va." [Range extends marginally into subtropical areas]

202	Quality of climate match data	High
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	
	Source(s)	Notes
	Floridata. 2012. <i>Magnolia tripetala</i> . http://www.floridata.com/ref/m/magn_tri.cfm . [Accessed 19 May 2014]	"Hardiness: USDA Zones 5-8. "
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Rich woods and ravines, mainly in uplands, rarely coastal plain; 0-1065m; Ala., Ark., Fla., Ga., Ind., Ky., Md., Miss., N.C., Ohio, Okla., Pa., S.C., Tenn., Va., W.Va." [Broad distribution and elevation range exceeding 1000 m, but primarily a temperate climate species]
	Backyard Gardener. 2014. <i>Magnolia tripetala</i> . http://www.backyardgardener.com/plantname/pd_c8cd.html . [Accessed 20 May 2014]	"USDA Hardiness Zone: 4 to 8" [Possibly broad climate suitability within temperate regions]

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Rich woods and ravines, mainly in uplands, rarely coastal plain; 0-1065m; Ala., Ark., Fla., Ga., Ind., Ky., Md., Miss., N.C., Ohio, Okla., Pa., S.C., Tenn., Va., W.Va."
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Duncan, W.H. & Duncan, M.B.. 2000. <i>Trees of the Southeastern United States</i> . University of Georgia Press, Athens, GA	"Of little commercial value; sometimes planted as an ornamental." [Used ornamentally within native range & North America. Little evidence of widespread cultivation elsewhere]

Qsn #	Question	Answer
301	Naturalized beyond native range	
	Source(s)	Notes
	Rhoads, A. F., & Block, T. A. (2007). The plants of Pennsylvania: an illustrated manual. University of Pennsylvania Press, Philadelphia, PA	"native, but also apparently introduced and spreading rapidly in some locations"
	Pennsylvania Natural Heritage Program. 2014. Factsheet. Umbrella Magnolia. <i>Magnolia tripetala</i> . www.naturalheritage.state.pa.us/factsheets/14152.pdf	[Possibly escaping outside its native range] "Umbrella magnolia has a range from Pennsylvania west and south into Oklahoma and the Gulf Coast states. In Pennsylvania, it reaches a northern border of its natural range, and has been documented in several southern counties. It grows on rich wooded slopes, wooded streambanks, and in moist ravines. The species has also been cultivated in locations (e.g., the Philadelphia area) that are believed to be outside its natural range in the state, and has escaped from these plantings to woodlands."
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No documented reports of naturalization

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
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	" <i>Magnolia tripetala</i> (L.) L. Magnoliaceae Cultivated 195-E" [Although Listed as an Environmental Weed by this compendium, a subsequent search of the supporting reference found no evidence that <i>Magnolia tripetala</i> is listed as a weed.]
	McAvoy, W.A. 2011. Non-native Invasive Plants of Delaware. Delaware Natural Heritage and Endangered Species Program Delaware Division of Fish and Wildlife. http://www.dnrec.delaware.gov/ . [Accessed]	[Negative impacts unspecified] " <i>Magnolia tripetala</i> - Invasive Watchlist:" ... "Invasive Watchlist: Invasive species that are not yet established in Delaware but have the potential to become abundant and widely distributed throughout the state. Invasive Watchlist species are often a priority for concern in surrounding states."

305	Congeneric weed	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Richardson, D. M., & Rejmánek, M. 2011. Trees and shrubs as invasive alien species—a global review. <i>Diversity and Distributions</i> , 17(5): 788-809	"Many large, particularly tropical, woody genera are clearly under-represented. Examples (with number of known invasive species/total number of species) are Psychotria (0/1850), ... Magnolia (0/220), ... "[No known invasive Magnolia species documented in this review publication]
	Randall, R.P. 2012. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	Several Magnolia species are listed as naturalized, but none are regarded as serious weeds

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Trees , deciduous, often multitrunked, to 15 m. Bark gray, smooth. Pith homogeneous. Twigs and foliar buds glabrous. Leaves crowded in terminal whorl-like clusters; stipules (4-)6.6-9. (-10) × 2.6-3.7 cm, abaxially red glandular, sparsely pilose. Leaf blade elliptic-oblong to narrowly obovate, or oblanceolate, (10-)26-57(-70) × (7.2-)10-30 cm, thin, broadest near middle, base cuneate to long-tapered, apex very short to long-acuminate or abruptly acute, rarely apiculate; surfaces abaxially densely pilose, especially on midvein, adaxially green, glabrous. "

402	Allelopathic	n
	Source(s)	Notes
	Abdelgaleil, S. A., & Hashinaga, F. 2007. Allelopathic potential of two sesquiterpene lactones from <i>Magnolia grandiflora</i> L. <i>Biochemical Systematics and Ecology</i> , 35 (11), 737-742	[Unknown for <i>Magnolia wilsonii</i> . Allelopathic properties present in other members of the genus] "The allelopathic effects of the two sesquiterpene lactones, costunolide and parthenolide, isolated from the leaves of <i>Magnolia grandiflora</i> L. were evaluated on the wheat (<i>Triticum aestivum</i> L.), lettuce (<i>Lactuca sativa</i> L.), radish (<i>Raphanus sativus</i> L.) and onion (<i>Allium cepa</i> L.). Seed germination of the test species was significantly reduced at 500 mg/ml by both compounds. Both sesquiterpenes showed pronounced inhibition of root length of the test species and the inhibitory effect was concentrationdependent. In addition, shoot growth of the four species was significantly inhibited at all the concentrations tested (10e500 mg/ml). Parthenolide reduced germination and inhibited seedling growth more than costunolide. Inhibition of root growth was generally greater than that of shoot growth. The results encourage the use of these sesquiterpenes as models for development of new herbicides."

403	Parasitic	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Trees , deciduous, often multitrunked, to 15 m."

Qsn #	Question	Answer
404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Hodges, J.D. , Evans, D.L. & Garnett, L.W. . 2010. Mississippi Trees. Mississippi Forestry Commission, Jackson, Mississippi	"Wildlife Value and Uses: only medium palatability for both browse and graze animals;"
	Latham, R. E., Beyea, J., Benner, M., Dunn, C. A., Fajvan, M. A., Freed, R. R., Grund, M., Horsley, S.B., Rhoads, A.F. & Shissler, B. P. 2005. Managing White-tailed Deer in Forest Habitat From an Ecosystem Perspective. In Report of the Deer Management Forum for Audubon Pennsylvania and Pennsylvania Habitat Alliance, Harrisburg, US.	[Possibly unpalatable to deer] "Table 4. The 116 native tree species of Pennsylvania (exclusive of subspecies, varieties, and hybrids) ranked, where known, according to relative browsing preference by deer" [Magnolia tripetala - browsing preference (spring/summer) = low; browsing preference (fall/winter) = low]

405	Toxic to animals	n
	Source(s)	Notes
	Hodges, J.D. , Evans, D.L. & Garnett, L.W. . 2010. Mississippi Trees. Mississippi Forestry Commission, Jackson, Mississippi	"Wildlife Value and Uses: only medium palatability for both browse and graze animals;" [No evidence]
	Cornell University. 2014. Plants Poisonous to Livestock and other Animals. http://www.ansci.cornell.edu/plants/index.html . [Accessed 20 May 2014]	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Missouri Botanical Garden. 2014. Magnolia tripetala. http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=d311 . [Accessed 19 May 2014]	"Problems: No serious insect or disease problems. Late frosts may damage flowers."
	OnlinePlantGuide.com. 2014. Magnolia tripetala /Umbrella Magnolia. http://www.onlineplantguide.com/Plant-Details/1620/ . [Accessed 20 May 2014]	"Susceptible to insects and diseases: Yes"
	Frankel, S. J., Hansen, E. M., Dick, M. A., & Ramsfield, T. D. 2011. Forest Phytophthora diseases in the Americas: 2007-2010. New Zealand Journal of Forestry Science 41S: S159-S167	"Table 3: Additions to the Associated Host List for Phytophthora ramorum, 2007 to February 2010" ... [Includes Magnolia tripetala]

Qsn #	Question	Answer
407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence
	Specialized Information Services, U.S. National Library of Medicine. 2014. TOXNET toxicology data network [online database]. http://toxnet.nlm.nih.gov/ . [Accessed 20 May 2014]	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Missouri Botanical Garden. 2014. <i>Magnolia tripetala</i> . http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=d311 . [Accessed 19 May 2014]	"It is an understory tree that is native to rich moist woods, ravines, slopes and along streams in the Appalachian Mountains from Pennsylvania and West Virginia to North Carolina, Tennessee and Kentucky plus the Blue Ridge Mountains into South Carolina, Georgia and Alabama." [Unlikely. Does not occur in fire prone areas]
	Maryland Department of Natural Resources. 2014. Firewise Landscaping Plants for Maryland. http://www.dnr.state.md.us/forests/fire/firewise.asp . [Accessed 20 May 2014]	"The following list contains landscape plants that can be grown in Maryland, are commercially available, and are relatively resistant to fire. There is no such thing as a fireproof plant; however, these species exhibit a stronger resistance to ignition by wildfires." [List includes <i>Magnolia tripetala</i>]
	Bernheim Arboretum and Research Forest. 2014. umbrella magnolia, <i>Magnolia tripetala</i> . http://bernheim.org/explore/arboretum/bernheim-select/umbrella-magnolia/ . [Accessed 21 May 2014]	"Trees are scattered in the forest understory in deep, moist soils along streams and swamp margins. Umbrella magnolia is an indicator of rich, moist woods."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Missouri Botanical Garden. 2014. <i>Magnolia tripetala</i> . http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=d311 . [Accessed 19 May 2014]	"Best grown in moist, slightly acidic, organically rich, well-drained loams in part shade. Tolerates close to full shade. Plants will grow in full sun, particularly in the northern parts of their growing range, as long as soils are kept moist."
	Ohio State University. 2003. Plant Facts. <i>Magnolia macrophylla</i> - Bigleaf Magnolia (Magnoliaceae). <i>Magnolia tripetala</i> - Umbrella Magnolia (Magnoliaceae). plantfacts.osu.edu/pdf/0247-717.pdf	"it is shade tolerant, but very sensitive to drought and fire."
	Floridata. 2012. <i>Magnolia tripetala</i> . http://www.floridata.com/ref/m/magn_tri.cfm . [Accessed 19 May 2014]	"Light: Partial shade to fairly deep shade."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Ohio State University. 2003. Plant Facts. <i>Magnolia macrophylla</i> - Bigleaf Magnolia (Magnoliaceae). <i>Magnolia tripetala</i> - Umbrella Magnolia (Magnoliaceae). plantfacts.osu.edu/pdf/0247-717.pdf	"grows best with partial shade and well-drained, slightly acid soil."
	Backyard Gardener. 2014. <i>Magnolia tripetala</i> . http://www.backyardgardener.com/plantname/pd_c8cd.html . [Accessed 21 May 2014]	"pH Range: 4.5 to 6.5 Soil Range: Sandy Loam to Some Clay "
	Missouri Botanical Garden. 2014. <i>Magnolia tripetala</i> . http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=d311 . [Accessed 21 May 2014]	"Plants appreciate consistent and regular moisture throughout the year, and are generally intolerant of soil extremes (dry or wet)."
	Dave's Garden. 2014. PlantFiles: Umbrella Magnolia - <i>Magnolia tripetala</i> . http://davesgarden.com/guides/pf/go/2454/ . [Accessed 21 May 2014]	"Soil pH requirements: 5.6 to 6.0 (acidic) 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"
	Floridata. 2012. <i>Magnolia tripetala</i> . http://www.floridata.com/ref/m/magn_tri.cfm . [Accessed 21 May 2014]	"Umbrella magnolia is a fast-growing little tree and it seems to do best in acidic soils."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Trees , deciduous, often multitrunked, to 15 m."

412	Forms dense thickets	n
	Source(s)	Notes
	Greller, A. M., Lindberg, A. J., Levine, M. E., & Lindberg, L. A. 2011. <i>Magnolia acuminata</i> , <i>M. macrophylla</i> , and <i>M. tripetala</i> in oak-dominated forests on the North Shore of Long Island, New York. <i>The Journal of the Torrey Botanical Society</i> , 138(2): 225-238	"The historical range of <i>Magnolia tripetala</i> is centered on the southern Appalachian Mountains, with nearly-contiguous major extensions east to coastal North Carolina, and south into northern Georgia and central Alabama." ... " <i>Magnolia tripetala</i> occurs in three stands and can be considered a dominant in one, Badgewood 10." ... "In Badgewood 10, <i>Magnolia tripetala</i> reaches its greatest dominance and density in the Oyster Bay Cove area, 11.34% b.a. and 62.6% Abundance."
	Pennsylvania Natural Heritage Program. 2014. Factsheet. Umbrella Magnolia. <i>Magnolia tripetala</i> . www.naturalheritage.state.pa.us/factsheets/14152.pdf	"The PA Biological Survey (PABS) considers umbrella magnolia to be a species of special concern, based on the few occurrences that have been recently confirmed. It has a PA legal rarity status of Threatened and a PABS suggested rarity status of Rare. About 25 occurrences have been documented in the state." [No evidence]
	Bernheim Arboretum and Research Forest. 2014. umbrella magnolia, <i>Magnolia tripetala</i> . http://bernheim.org/explore/arboretum/bernheim-select/umbrella-magnolia/ . [Accessed 21 May 2014]	[No evidence] "Umbrella magnolia ranges from southern Pennsylvania to northern Georgia and Alabama and west to central Kentucky and southwestern Arkansas. Trees are scattered in the forest understory in deep, moist soils along streams and swamp margins. Umbrella magnolia is an indicator of rich, moist woods."

501	Aquatic	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	"Rich woods and ravines, mainly in uplands, rarely coastal plain; 0-1065m" [Terrestrial tree]

502	Grass	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	Magnoliaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	Magnoliaceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	"Trees , deciduous, often multitrunked, to 15 m. "

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Pennsylvania Natural Heritage Program. 2014. Factsheet. Umbrella Magnolia. <i>Magnolia tripetala</i> . www.naturalheritage.state.pa.us/factsheets/14152.pdf	"Maintenance of natural populations of umbrella magnolia and its habitat type will be enhanced by creating buffers around fragmented woodland habitat and controlling invasive species. Populations of umbrella magnolia that have resulted from escapes from cultivation are not considered to be of conservation significance." [May be rare within portions of its broad range, but substantial reproductive failure has not been reported]

602	Produces viable seed	y
	Source(s)	Notes
	Badger, K., & Jackson, M. T. 2013. A study of the natural history of naturally occurring populations of <i>Magnolia tripetala</i> L. in Indiana. In Proceedings of the Indiana Academy of Science 93: 309-312	"Currently, <i>M. tripetala</i> populations appear to be stable in Indiana. Reproduction by runners and seeds seems to be adequate to maintain or even expand the populations."

Qsn #	Question	Answer
	Lady Bird Johnson Wildflower Center. 2014. Native Plant Database - <i>Magnolia tripetala</i> . http://www.wildflower.org/plants/result.php?id_plant=MATR . [Accessed 19 May 2014]	"Propagation - Description: Cleaned, fall-sown magnolia seed will sprout the following summer. "

603	Hybridizes naturally	
	Source(s)	Notes
	Ohio State University. 2003. Plant Facts. <i>Magnolia macrophylla</i> - Bigleaf Magnolia (Magnoliaceae). <i>Magnolia tripetala</i> - Umbrella Magnolia (Magnoliaceae). plantfacts.osu.edu/pdf/0247-717.pdf	" <i>Magnolia tripetala</i> is the parent of a number of hybrids more common in the Southern U.S." [Artificial hybrid. Unknown if natural hybrids occur]
	Qiu, Y. L., Chase, M. W., & Parks, C. R. 1995. A chloroplast DNA phylogenetic study of the eastern Asia-eastern North America disjunct section <i>Rytidospermum</i> of <i>Magnolia</i> (Magnoliaceae). <i>American Journal of Botany</i> 82(12): 1582-1588	"The results of our hybridization experiments, however, are consistent with the pattern revealed in the cpDNA analysis. Crossing <i>M. tripetala</i> with <i>M. hypoleuca</i> has repeatedly produced heterotic F1 hybrids, whereas the hybrids obtained between <i>M. tripetala</i> and <i>M. fraseri</i> var. <i>fraseri</i> are less vigorous (Y.-L. Qiu and C. R. Parks, unpublished data)."

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Heiser Jr, C. B. 2013. Some observations on pollination and compatibility in <i>Magnolia</i> . <i>Proceedings of the Indiana Academy of Science</i> 72: 259-266	"Self-pollination of the flower with its own pollen was found to be impossible in <i>M. tripetala</i> and <i>M. virginica</i> . Selves were obtained, however, on three plants of these two species by using different flowers on the same plant as a source of pollen. These selfed-fruits were found to produce the same number of seeds found in open pollinated fruits of the same plants. In these two species it was found that emasculated flowers which were not pollinated failed to set fruit, and although the possibility of pseudogamous apomixis cannot yet be ruled out, it would appear that these species are self-compatible." ... "Successful selves on <i>M. tripetala</i> and <i>M. virginiana</i> were secured by crossing different flowers on the same plant. It is pointed out that self-compatibility may have been the original condition in the angiosperms and possible advantages of a system of self-pollination, which does not exclude outcrossing, are presented."

605	Requires specialist pollinators	y
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	"Flowers malodorous, 5.5-11 cm across; spathaceous bracts 2, abaxially glandular; tepals spreading, creamy white, outermost whorl sepaloid, reflexed, greenish; stamens 81-103(-115), 8-17 mm; filaments purple; pistils (45-)53-66(-73)."

Qsn #	Question	Answer
	Heiser Jr, C. B. 2013. Some observations on pollination and compatibility in <i>Magnolia</i> . Proceedings of the Indiana Academy of Science 72: 259-266	"Four flowers containing beetles on May 25 were tagged and later observed to set good fruits. Honeybees (<i>Apis mellifera</i>) were observed visiting the flowers on three occasions, and the two which were captured were found to have an abundance of <i>Magnolia</i> pollen on their bodies. It seems, unlikely, however, that bees could serve as important pollinators of this species, for they were observed to visit only fully opened flowers at which time the stigmas are not receptive." ... "Although the investigation is rather limited, it nevertheless seems reasonable to infer that <i>M. tripetala</i> , is primarily, if not entirely, pollinated by beetles. Although perhaps no one beetle should be regarded as more important than the others, <i>Epuraea</i> was observed more than other species and it was found on both stigmas and stamens and was captured both at Bloomington and in Crawford County."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Hodges, J.D. , Evans, D.L. & Garnett, L.W. . 2010. Mississippi Trees. Mississippi Forestry Commission, Jackson, Mississippi	"Propagation: seed (no cold stratification required); bare root; container Other: resprout/coppice potential"

607	Minimum generative time (years)	
	Source(s)	Notes
	Bernheim Arboretum and Research Forest. 2014. umbrella magnolia, <i>Magnolia tripetala</i> . http://bernheim.org/explore/arboretum/bernheim-select/umbrella-magnolia/ . [Accessed 21 May 2014]	"Growth Rate - Slow to medium."
	Floridata. 2012. <i>Magnolia tripetala</i> . http://www.floridata.com/ref/m/magn_tri.cfm . [Accessed 19 May 2014]	"Umbrella magnolia is a fast-growing little tree and it seems to do best in acidic soils."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae. Oxford University Press, Oxford, UK	[Genus Description] "Follicles persistent, coalescent, forming conelike aggregate, abaxially dehiscent. Seeds with red, pink, or orange oily aril, extruded from follicles and suspended by funiculi." [Species Description] " Follicetums cylindric to ovoid-cylindric, 6-10 × 2-3.5 cm; follicles long-beaked, glabrous. Seeds lenticular to nearly ovoid, 9-12 mm, aril deep pink to red." [Arillate seeds adapted for zoochory. No evidence that they are dispersed accidentally]

Qsn #	Question	Answer
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Floridata. 2012. <i>Magnolia tripetala</i> . http://www.floridata.com/ref/m/magn_tri.cfm . [Accessed 19 May 2014]	"Umbrella magnolia is an attractive ornamental, but infrequently found in cultivation." [Ornamental]
703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	No evidence, and unlikely. A tree that is occasionally grown as an ornamental.
704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	[Genus Description] "Follicles persistent, coalescent, forming conelike aggregate, abaxially dehiscent. Seeds with red, pink, or orange oily aril, extruded from follicles and suspended by funiculi." [Species Description] "Follicetums cylindric to ovoid-cylindric, 6-10 × 2-3.5 cm; follicles long-beaked, glabrous. Seeds lenticular to nearly ovoid, 9-12 mm, aril deep pink to red." [No adaptations for wind dispersal]
705	Propagules water dispersed	
	Source(s)	Notes
	Lady Bird Johnson Wildflower Center. 2014. Native Plant Database - <i>Magnolia tripetala</i> . http://www.wildflower.org/plants/result.php?id_plant=MATR . [Accessed 19 May 2014]	"Native Habitat: Stream banks; swamps; rich woods " [Distribution suggests seeds may be secondarily dispersed by water]

Qsn #	Question	Answer
706	Propagules bird dispersed	y
	Source(s)	Notes
	Bernheim Arboretum and Research Forest. 2014. umbrella magnolia, <i>Magnolia tripetala</i> . http://bernheim.org/explore/arboretum/bernheim-select/umbrella-magnolia/ . [Accessed 21 May 2014]	"Fruit is a large cone-like structure with spirally arranged seeds. The outer layer of the seed is scarlet. Fruit ripens between September and October. The fruits ripen in early fall and the seeds are scattered by birds."
	Stiles, E. W. 1980. Patterns of fruit presentation and seed dispersal in bird-disseminated woody plants in the eastern deciduous forest. <i>American Naturalist</i> , 116(5): 670-688	"Table 1. Approximate Fruit Dispersal Times (For 40° N), Seed Weights, and Fruit Types for Bird Disseminated Woody Plants of the Eastern Deciduous Forest" [Table includes <i>Magnolia tripetala</i> among the bird-dispersed trees]
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	[Genus Description] "Follicles persistent, coalescent, forming conelike aggregate, abaxially dehiscent. Seeds with red, pink, or orange oily aril, extruded from follicles and suspended by funiculi." [Species Description] "Follicetums cylindric to ovoid-cylindric, 6-10 × 2-3.5 cm; follicles long-beaked, glabrous. Seeds lenticular to nearly ovoid, 9-12 mm, aril deep pink to red." [Arillate seeds adapted for bird dispersal]

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Flora of North America Editorial Committee, eds. 1997. <i>Flora of North America: Volume 3: Magnoliophyta: Magnoliidae and Hamamelidae</i> . Oxford University Press, Oxford, UK	[Genus Description] "Follicles persistent, coalescent, forming conelike aggregate, abaxially dehiscent. Seeds with red, pink, or orange oily aril, extruded from follicles and suspended by funiculi." [Species Description] "Follicetums cylindric to ovoid-cylindric, 6-10 × 2-3.5 cm; follicles long-beaked, glabrous. Seeds lenticular to nearly ovoid, 9-12 mm, aril deep pink to red." [Arillate seeds adapted for zoochory. No evidence for external dispersal]

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Stiles, E. W. 1980. Patterns of fruit presentation and seed dispersal in bird-disseminated woody plants in the eastern deciduous forest. <i>American Naturalist</i> , 116(5): 670-688	"Table 1. Approximate Fruit Dispersal Times (For 40° N), Seed Weights, and Fruit Types for Bird Disseminated Woody Plants of the Eastern Deciduous Forest" [Table includes <i>Magnolia tripetala</i> among the bird-dispersed trees. Seeds presumably dispersed internally & survive gut passage]
	Hemmerly, T.E. 2000. <i>Appalachian Wildflowers</i> . University of Georgia Press, Athens, GA	"The outer coverings of their seeds are eaten by wildlife"

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

802	Evidence that a persistent propagule bank is formed (>1 yr)	
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Qsn #	Question	Answer
	Source(s)	Notes
	Royal Botanic Gardens Kew. 2008. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 19 May 2014]	"Storage Behaviour: No data available for species. Of 8 known taxa of genus <i>Magnolia</i> , 75.00% Orthodox(p/?), 12.50% Recalcitrant(?), 12.50% Uncertain"

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Hodges, J.D. , Evans, D.L. & Garnett, L.W. . 2010. Mississippi Trees. Mississippi Forestry Commission, Jackson, Mississippi	"Other: resprout/coppice potential"

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Escapes cultivation outside natural range in North America
- On Delaware invasive plant watch list [No specifics provided]
- Shade tolerant
- Seeds dispersed by birds & intentionally by people
- Self-compatible
- Able to coppice & resprout after cutting
- Missing ecological information could change the assessment prediction

Low Risk Traits

- May be able to naturalize only in higher, cooler elevations in tropical islands
- No negative impacts documented
- Unarmed (no spines, thorns or burrs)
- Moderately palatable to browsing & grazing animals
- Non-toxic
- Ornamental
- Requires beetle for effective pollination
- Does not spread vegetatively