

**Taxon:** *Brachychiton rupestris* (T. Mitch. ex Lindl.) K. Schum.

**Family:** Malvaceae

**Common Name(s):** bottletree  
 narrow-leaf bottletree  
 Queensland bottletree  
 Queensland rattletree

**Synonym(s):** *Delabechea rupestris* T. Mitch. ex ...

**Assessor:** Chuck Chimera

**Status:** Assessor Approved

**End Date:** 3 Jan 2018

**WRA Score:** 1.0

**Designation:** EVALUATE

**Rating:** Evaluate

**Keywords:** Tropical Tree, Fodder, Ornamental, Drought-Tolerant, Slow Growing

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	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	n
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	y=1, n=-1	n
405	Toxic to animals		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
408	Creates a fire hazard in natural ecosystems		
409	Is a shade tolerant plant at some stage of its life cycle		
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	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	y=1, n=-1	y
604	Self-compatible or apomictic		
605	Requires specialist pollinators		
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	>3
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		
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed		
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m <sup>2</sup> )		
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
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	[No evidence of domestication] "Aborigines ate the roots of young plants of narrow-leaved bottletree. They also ate the gummy secretions that discharged from wounds made in the trunk."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2017. 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
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"In subcoastal and semi-arid regions of Queensland between latitudes 22°S and 28°S and west to the 500 mm annual rainfall isohyet."
	USDA, ARS, Germplasm Resources Information Network. 2017. 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 29 Dec 2017]	"Native: Australasia Australia: Australia - Queensland"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. 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 29 Dec 2017]	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Useful Tropical Plants Database. 2018. <i>Brachychiton rupestris</i> . <a href="http://tropical.theferns.info/viewtropical.php?id=Brachychiton+rupestris">http://tropical.theferns.info/viewtropical.php?id=Brachychiton+rupestris</a> . [Accessed 2 Jan 2018]	"A plant of the subtropical to tropical regions of Australia, it can tolerate a range of climates although it may be slow growing in cooler climes. It grows in a climate with plenty of rain in the wet season, but this is followed by a long dry season[385]. Plants can tolerate occasional frosts with temperatures as low as -7°c[385]."

Qsn #	Question	Answer
204	Native or naturalized in regions with tropical or subtropical climates	y
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"In subcoastal and semi-arid regions of Queensland between latitudes 22°S and 28°S and west to the 500 mm annual rainfall isohyet."

205	Does the species have a history of repeated introductions outside its natural range?	y
	<b>Source(s)</b>	<b>Notes</b>
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. <i>Brachychiton rupestris</i> . <a href="http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html">http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html</a> . [Accessed 29 Dec 2017]	"It has been cultivated in southern Australia for many decades and can be seen as an ornamental feature around the world."
	Dave's Garden. 2018. Narrow-leaf Bottletree, Queensland Bottle Tree, Australian Bottle Tree, Queensland Kurrajong. <i>Brachychiton rupestris</i> . <a href="https://davesgarden.com/guides/pf/go/482/">https://davesgarden.com/guides/pf/go/482/</a> . [Accessed 2 Jan 2018]	"This plant has been said to grow in the following regions: Casa Grande, Arizona Golden Valley, Arizona Phoenix, Arizona Scottsdale, Arizona Tucson, Arizona (2 reports) Yuma, Arizona Bonsall, California Brawley, California Clayton, California Fairfield, California Hayward, California Reseda, California Brooksville, Florida Cocoa, Florida Dunnellon, Florida Port Richey, Florida Saint Petersburg, Florida Las Vegas, Nevada Austin, Texas"

301	Naturalized beyond native range	n
	<b>Source(s)</b>	<b>Notes</b>
	Wilcox, M., Bradshaw, C., & Cameron, E. (2004). Woody plants of the Auckland Domain. <i>Blumea</i> , 18, 431-440	"List of woody plants in the Auckland Domain" [Includes <i>Brachychiton rupestris</i> . No evidence of naturalization]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. 2018. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. <a href="http://botany.si.edu/">http://botany.si.edu/</a> . [Accessed 2 Jan 2018]	No evidence to date
	Global Register of Introduced and Invasive Species. 2018. <i>Brachychiton rupestris</i> . <a href="http://griis.org/">http://griis.org/</a> . [Accessed 2 Jan 2018]	Present in India. No evidence of naturalization or impacts [India Editors (2016)]

302	Garden/amenity/disturbance weed	n
	<b>Source(s)</b>	<b>Notes</b>
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Qsn #	Question	Answer
303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	y
	Source(s)	Notes
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	"The highest density of kurrajongs (69.3 trees ha <sup>-1</sup> ) was observed in the most disturbed area of Kings Park, and there was a strong relationship between density of <i>B. populneus</i> and disturbance (P = 0.058)... <i>Brachychiton populneus</i> appears to have become a weed in Kings Park because, first, it is dispersed widely into new sites through the foraging behaviour of vertebrates and once germinated has no grazing pressure, and, second, its development of a root tuber and ability to resprout means the seedlings are resilient in this frequently disturbed Mediterranean environment."
	Queensland Government. (2018). Weeds of Australia. <i>Brachychiton acerifolius</i> . <a href="http://keyserver.lucidcentral.org">http://keyserver.lucidcentral.org</a> . [Accessed 2 Jan 2018]	"This species is regarded as an environmental weed in those parts of New South Wales that are beyond its native range. Flame tree ( <i>Brachychiton acerifolius</i> ) occurs naturally in sub tropical rainforest along the New South Wales coast, north from the Shoalhaven River, but because of extensive cultivation it has become established in habitats and parts of New South Wales that it did not naturally occupy. For example, it is regarded as an environmental weed in many parts of the wider Sydney and Blue Mountains region (i.e. in non-rainforest areas). It is also an emerging weed in the southern parts of the New South Wales south coast (i.e. south of the Shoalhaven River)."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	<i>Brachychiton acerifolius</i> listed as naturalized and/or a weed

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Anderson, E. 2016. <i>Plants of Central Queensland: Identification and Uses of Native and Introduced Species</i> . CSIRO Publishing, Clayton South, Australia	[No evidence] "Habit: beautiful, large tree up to 20 m tall; trunk becoming bottle-shaped, sometimes up to 3.5 m in diameter, but usually smaller; bark on mature trees pale grey and finely fissured, on younger trees usually tinged with green; interior of trunk spongy and sappy with much soft tissue. Leaves: 5–10 cm long, usually deeply divided into narrow lobes, deciduous September to October. Flowers: bell-shaped, yellowish, near the ends of branches; flowering September to November. Fruits: leathery, boat-shaped pods, dark brown, less than 5 cm long."

Qsn #	Question	Answer
402	<b>Allelopathic</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. 2018. Personal Communication	Unknown. No evidence found

403	<b>Parasitic</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Habit: beautiful, large tree up to 20 m tall; trunk becoming bottle-shaped, sometimes up to 3.5 m in diameter, but usually smaller; bark on mature trees pale grey and finely fissured, on younger trees usually tinged with green; interior of trunk spongy and sappy with much soft tissue." [Malvaceae. No evidence]

404	<b>Unpalatable to grazing animals</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Although the leaves of narrow-leaved bottletree are eaten readily by stock, the species is used for drought feeding mainly by cutting down the whole tree, removing a portion of the bark and allowing cattle to eat the soft tissue in the trunk. The soft tissue provides a good source of energy, but it is deficient in protein."

405	<b>Toxic to animals</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	[Possibly, although unlikely to occur unless tree is cut down] "The soft tissue provides a good source of energy, but it is deficient in protein. Occasionally, deaths from nitrate poisoning occur in cattle which have eaten the pulp. The conditions determining toxicity are not well documented."

406	<b>Host for recognized pests and pathogens</b>	
	<b>Source(s)</b>	<b>Notes</b>
	SelecTree. <i>Brachychiton rupestris</i> Tree Record. 1995-2018. <a href="https://selectree.calpoly.edu/tree-detail/brachychiton-rupestris">https://selectree.calpoly.edu/tree-detail/brachychiton-rupestris</a> . [Accessed 2 Jan 2018]	"Pests & Disease Information. Susceptible to Root Rot."
	Gardening Australia. 2018. Fact Sheet: Bottle Trees. <a href="http://www.abc.net.au/gardening/stories/s2183287.htm">http://www.abc.net.au/gardening/stories/s2183287.htm</a> . [Accessed 2 Jan 2018]	"The bottle tree doesn't get attacked by many pests but damage to the trunk makes the tree susceptible to infection. Make sure you don't damage the bark with the mower or the brushcutter and don't pile mulch against the trunk."

407	<b>Causes allergies or is otherwise toxic to humans</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Aborigines ate the roots of young plants of narrow-leaved bottletree. They also ate the gummy secretions that discharged from wounds made in the trunk."

Qsn #	Question	Answer
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. <i>Brachychiton rupestris</i> . <a href="http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html">http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html</a> . [Accessed 29 Dec 2017]	"In terms of horticultural benefits the Queensland Bottle Tree serves not only as an ornamental feature but also provides wind protection and shade. Yet the value of Kurrajong reaches beyond the aesthetics and serves to sustain people and animals alike in times of need. The name of the bottle tree can be taken literally, as there is a significant amount of water stored between the inner bark and the trunk. Aboriginals historically carved holes into the soft bark to create reservoir-like structures. The seeds, roots, stems, and bark have all traditionally been a source of food for people and animals alike. Another use has been made of the fibrous inner bark to make twine or rope and even woven together to make fishing nets."
	UBC Botanical Garden. 2015. Botany Photo of the Day. <i>Brachychiton rupestris</i> . <a href="http://botanyphoto.botanicalgarden.ubc.ca">http://botanyphoto.botanicalgarden.ubc.ca</a> . [Accessed 2 Jan 2018]	"The seeds are surrounded by a hairy coating which will irritate unprotected skin." [Mechanical irritant. No evidence of toxicity or allergens]

408	Creates a fire hazard in natural ecosystems	
	Source(s)	Notes
	Tasmania Fire Service. 2010. Fire resisting garden plants for the urban fringe and rural areas. <a href="http://www.fire.tas.gov.au">http://www.fire.tas.gov.au</a> . [Accessed ]	"Moderate Flammability These plants should be avoided in the Building Protection Zone. They should not be allowed to dominate your garden and should be well maintained, being especially careful to remove dead material before it accumulates." [Brachychiton rupestris included in this category. Unknown in natural settings, but flammability could increase fire risk if grown in higher densities or close to homes]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	SelecTree. <i>Brachychiton rupestris</i> Tree Record. 1995-2018. <a href="https://selectree.calpoly.edu/tree-detail/brachychiton-rupestris">https://selectree.calpoly.edu/tree-detail/brachychiton-rupestris</a> . [Accessed 2 Jan 2018]	"Exposure Full Sun to Partial Shade."
	Dave's Garden. 2018. Narrow-leaf Bottletree, Queensland Bottle Tree, Australian Bottle Tree, Queensland Kurrajong. <i>Brachychiton rupestris</i> . <a href="https://davesgarden.com/guides/pf/go/482/">https://davesgarden.com/guides/pf/go/482/</a> . [Accessed 2 Jan 2018]	"Sun Exposure: Full Sun"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Australian Seed. 2017. <i>Brachychiton rupestris</i> . <a href="https://australianseed.com/shop/item/brachychiton-rupestris">https://australianseed.com/shop/item/brachychiton-rupestris</a> . [Accessed 2 Jan 2018]	"Adapts well to a variety of soils but prefers a medium to heavy soil in an open sunny position. Drought and frost tolerant and very hardy."
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. <i>Brachychiton rupestris</i> . <a href="http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html">http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html</a> . [Accessed 29 Dec 2017]	"It grows in a soil that consists of a medium to heavy clay, silt, sand and volcanic rocks. Yet the tree is quite hardy and can tolerate a variety of climates and soil types."

Qsn #	Question	Answer
	Australian Native Plant Society. 2013. <i>Brachychiton rupestris</i> . <a href="http://anpsa.org.au/b-rup.html">http://anpsa.org.au/b-rup.html</a> . [Accessed 3 Jan 2018]	"It tolerates a range of soils."
	San Marcos Growers. 2017. <i>Brachychiton rupestris</i> - Queensland Bottle Tree. <a href="https://www.smgrowers.com">https://www.smgrowers.com</a> . [Accessed 2 Jan 2018]	"Plant in full sun in most any soil type and give moderate to little irrigation"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Anderson, E. 2016. <i>Plants of Central Queensland: Identification and Uses of Native and Introduced Species</i> . CSIRO Publishing, Clayton South, Australia	"Habit: beautiful, large tree up to 20 m tall; trunk becoming bottle-shaped, sometimes up to 3.5 m in diameter, but usually smaller; bark on mature trees pale grey and finely fissured, on younger trees usually tinged with green; interior of trunk spongy and sappy with much soft tissue."

412	Forms dense thickets	n
	Source(s)	Notes
	Anderson, E. 2016. <i>Plants of Central Queensland: Identification and Uses of Native and Introduced Species</i> . CSIRO Publishing, Clayton South, Australia	"In clay and clay-loam soils. The narrow-leaved bottletree is often associated with brigalow, softwood or gidgee scrubs." [No evidence or indication that pure stands are formed within native range]
	Eddie, C. 2012. <i>Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields Second Edition</i> . Santos Ltd, Adelaide	"Occurs throughout the coverage area and is most commonly associated with brigalow woodland and vine thickets; also occurs in open, grassy downs, mulga woodland and on residual ridges." [No evidence]
	McDonald, W. J., Young, P. A., & Watson, M. A. (1998). <i>Distribution and status of the rainforest communities of south-east Queensland. Rainforest recovery for the new millennium</i> . World Wildlife Fund, Sydney, 28-66	[Emergent tree in thicket communities] "Semi-evergreen vine thicket communities are typically low and relatively open with large bottle tree emergents ( <i>Brachychiton rupestris</i> and <i>B. australis</i> )."

501	Aquatic	n
	Source(s)	Notes
	Anderson, E. 2016. <i>Plants of Central Queensland: Identification and Uses of Native and Introduced Species</i> . CSIRO Publishing, Clayton South, Australia	[Terrestrial] "Habit: beautiful, large tree up to 20 m tall ... In clay and clay-loam soils. The narrow-leaved bottletree is often associated with brigalow, softwood or gidgee scrubs."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. 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 29 Dec 2017]	Family: Malvaceae Subfamily: Sterculioideae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes



Qsn #	Question	Answer
	USDA, ARS, Germplasm Resources Information Network. 2017. 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 29 Dec 2017]	Family: Malvaceae Subfamily: Sterculioideae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
Source(s)		Notes
Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia		"Habit: beautiful, large tree up to 20 m tall; trunk becoming bottle-shaped, sometimes up to 3.5 m in diameter, but usually smaller; bark on mature trees pale grey and finely fissured, on younger trees usually tinged with green; interior of trunk spongy and sappy with much soft tissue."

601	Evidence of substantial reproductive failure in native habitat	n
Source(s)		Notes
Australian Native Plant Society. 2013. <i>Brachychiton rupestris</i> . <a href="http://anpsa.org.au/b-rup.html">http://anpsa.org.au/b-rup.html</a> . [Accessed 3 Jan 2018]		"Conservation Status: Not considered to be at risk in the wild."
Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia		"In subcoastal and semi-arid regions of Queensland between latitudes 22°S and 28°S and west to the 500 mm annual rainfall isohyet." [No evidence]

602	Produces viable seed	y
Source(s)		Notes
UBC Botanical Garden. 2015. Botany Photo of the Day. <i>Brachychiton rupestris</i> . <a href="http://botanyphoto.botanicalgarden.ubc.ca">http://botanyphoto.botanicalgarden.ubc.ca</a> . [Accessed 2 Jan 2018]		" <i>Brachychiton rupestris</i> seeds germinate readily and can be grown in most soil types."
Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia		"Fruits: leathery, boat-shaped pods, dark brown, less than 5 cm long."
Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. <i>Brachychiton rupestris</i> . <a href="http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html">http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html</a> . [Accessed 29 Dec 2017]		"The species can be cultivated either by seed or transplantation. When collecting the seed it is important to wear gloves as the exterior of the seeds have irritating hairs. No preparation is necessary before the seed is planted. Transplantation requires minimal soil preparation."

603	Hybridizes naturally	y
Source(s)		Notes
Eddie, C. 2012. Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields Second Edition. Santos Ltd, Adelaide		" <i>Brachychiton populneus</i> ... Occasionally hybridises with narrow-leaved bottle tree ... <i>Brachychiton rupestris</i> "

Qsn #	Question	Answer
	Macqueen, P. Beautiful brachychitons. Newsletter for the Queens land Murray -Darling Basin. Summer 2015: 3	"Species do hybridise when grown in proximity to each other. As a result natural hybrids are not uncommonly found and have been described – B x vinicolour, 'Clarabelle' (B acerifolius x discolour) large pink flowers, B turgidulus (B. populenus x B. rupestris) with intermediate form found in western areas, B x roseus (B. acerifolius x B. populenus) with large panicles of rose coloured flowers, B x excellens (B. bidwillii x B. discolour) also with large pink flowers."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Hansman, D. J. (2001). Floral biology of dry rainforest in north Queensland and a comparison with adjacent savanna woodland. Australian Journal of Botany, 49(2), 137-153	[Unknown. Related taxa may be primarily outcrossing] "For taxa with hermaphrodite or monoecious flowers, separation of anther and stigma temporally (such as in <i>Brachychiton australis</i> , <i>B. chillagoensis</i> and <i>Euroschinus falcatus</i> ) or spatially (with stigma above anthers, or monoecy) would tend to promote outcrossing."

605	Requires specialist pollinators	
	Source(s)	Notes
	Macqueen, P. Beautiful brachychitons. Newsletter for the Queens land Murray -Darling Basin. Summer 2015: 3	"The large open flowers that attract nectar feeding birds, when they have few leaves, make the trees very showy." [Generic Description]
	Franklin, D. C. (2016). Flowering while leafless in the seasonal tropics need not be cued by leaf drop: evidence from the woody genus <i>Brachychiton</i> (Malvaceae). Plant Ecology and Evolution, 149(3), 272-279	"The pollinators of <i>Brachychiton</i> spp. are unknown, but the flowers of <i>B. megaphyllum</i> (flowers while leafless in the dry season) are visited by, and pollen carried by small 'trap-lining' honeyeaters (birds) and native bees (Franklin & Bate 2013)."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. <i>Brachychiton rupestris</i> . <a href="http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html">http://www.anbg.gov.au/gnp/interns-2005/brachychiton-rupestris.html</a> . [Accessed 3 Jan 2018]	"The species can be cultivated either by seed or transplantation."

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Australian Native Plant Society. 2013. <i>Brachychiton rupestris</i> . <a href="http://anpsa.org.au/b-rup.html">http://anpsa.org.au/b-rup.html</a> . [Accessed 3 Jan 2018]	" <i>B. rupestris</i> is commonly cultivated and is hardy in a range of climates although it may be slow growing. The bottle shaped trunk may start to be noticeable at around 5-8 years of age."
	Plant This. 2018. <i>Brachychiton rupestris</i> . <a href="http://www.plantthis.com.au">http://www.plantthis.com.au</a> . [Accessed 2 Jan 2018]	"Growth rate: slow"
	Talhok S.N. , Fabian M., Dagher R. 2015. Landscape Plant Database. Department of Landscape Design & Ecosystem Management, American University of Beirut. <a href="http://landscapeplant.aub.edu.lb">http://landscapeplant.aub.edu.lb</a> . [Accessed 2 Jan 2018]	"Growth Rate: Slow" ... "Height at Maturity: 15 to 23 m" [Plant grows 25 cm or less per year. At this growth rate, it would take 60 years to reach ultimate maturity. Although trees probably reach maturity earlier than this, they are unlikely to reach maturity earlier than 4 years of growth]

Qsn #	Question	Answer
	Dave's Garden. 2018. Narrow-leaf Bottletree, Queensland Bottle Tree, Australian Bottle Tree, Queensland Kurrajong. <i>Brachychiton rupestris</i> . <a href="https://davesgarden.com/guides/pf/go/482/">https://davesgarden.com/guides/pf/go/482/</a> . [Accessed 2 Jan 2018]	"On Dec 26, 2014, Bloobeari from Cocoa West, FL wrote: I live in Cocoa, Florida, on the east coast of Florida, about 1 mile from the Indian river. Our neighborhood has a gorgeous australian bottle palm that is about 20 ft high, and has grown about 8 ft in the last 3 years. I have watched it but have never seen it produce any type of flower or fruit. "

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	UBC Botanical Garden. 2015. Botany Photo of the Day. <i>Brachychiton rupestris</i> . <a href="http://botanyphoto.botanicalgarden.ubc.ca">http://botanyphoto.botanicalgarden.ubc.ca</a> . [Accessed 3 Jan 2018]	"Each follicle holds 4 to 8 (up to 12) seeds. The seeds are surrounded by a hairy coating which will irritate unprotected skin." [No evidence that hairs aid in external attachment]
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Fruits: leathery, boat-shaped pods, dark brown, less than 5 cm long."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Vermeulen, N. 1998. Encyclopedia of House Plants. 2nd Print. Rebo Productions, Lisse, Netherlands	"Plants in the juvenile form of these colossal trees are on sale as house plants. Their swollen stems are often strangely twisted, giving them an oddly amusing appearance. The plant can tolerate dry air very well."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Habit: beautiful, large tree up to 20 m tall ... Fruits: leathery, boat-shaped pods, dark brown, less than 5 cm long." [No evidence that seeds are contaminants of produce, and unlikely to be grown with produce or other commercial product]

704	Propagules adapted to wind dispersal	
	Source(s)	Notes
	UBC Botanical Garden. 2015. Botany Photo of the Day. <i>Brachychiton rupestris</i> . <a href="http://botanyphoto.botanicalgarden.ubc.ca">http://botanyphoto.botanicalgarden.ubc.ca</a> . [Accessed 2 Jan 2018]	"The first photo displays the seeds and pod of <i>Brachychiton rupestris</i> . It forms groups of 3 to 5 boat shaped follicles (dry fruit from one carpel that contains multiple seeds). Each follicle holds 4 to 8 (up to 12) seeds. The seeds are surrounded by a hairy coating which will irritate unprotected skin." [Hairs might aid in movement by wind, but otherwise do not possess any adaptations for wind dispersal]

705	Propagules water dispersed	n
	Source(s)	Notes

Qsn #	Question	Answer
	Anderson, E. 2016. Plants of Central Queensland: Identification and Uses of Native and Introduced Species. CSIRO Publishing, Clayton South, Australia	"Fruits: leathery, boat-shaped pods, dark brown, less than 5 cm long." ... "The narrow-leaved bottletree is often associated with brigalow, softwood or gidgee scrubs." [No evidence of water dispersal. Habitat suggests water is not a vector for dispersal of seeds]

706	Propagules bird dispersed	
	Source(s)	Notes
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	[Bird seed predators may disperse seeds of related species. Unknown if birds similarly disperse <i>B. rupestris</i> ] "The observations in this study suggest that the use of <i>B. populneus</i> seed by generalist vectors has also facilitated colonization of the weed. In Kings Park, <i>B. populneus</i> was most commonly observed beneath the canopy or close to the trunks of another tree, and in many cases there was clumping of many <i>B. populneus</i> seedlings and saplings around a tree. The dispersal of seeds to these sites by vertebrate seed predators may be responsible for this pattern. Australian ravens were observed on several occasions in flight carrying <i>B. populneus</i> fruit or perched in trees with <i>B. populneus</i> fruit in their beaks. It is possible that ravens, perched in trees feeding on transported fruit, do not consume all the seed, and some seed falls to the ground. The foraging behaviour of black rats may also be responsible for establishment patterns, with caches of eaten and uneaten fruit and seeds observed near the base of trees."

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	[Bird & rodent seed predators may disperse seeds of related species. Unknown if they similarly disperse <i>B. rupestris</i> by dropping or caching some seeds] "The observations in this study suggest that the use of <i>B. populneus</i> seed by generalist vectors has also facilitated colonization of the weed. In Kings Park, <i>B. populneus</i> was most commonly observed beneath the canopy or close to the trunks of another tree, and in many cases there was clumping of many <i>B. populneus</i> seedlings and saplings around a tree. The dispersal of seeds to these sites by vertebrate seed predators may be responsible for this pattern. Australian ravens were observed on several occasions in flight carrying <i>B. populneus</i> fruit or perched in trees with <i>B. populneus</i> fruit in their beaks. It is possible that ravens, perched in trees feeding on transported fruit, do not consume all the seed, and some seed falls to the ground. The foraging behaviour of black rats may also be responsible for establishment patterns, with caches of eaten and uneaten fruit and seeds observed near the base of trees."

708	Propagules survive passage through the gut	
	Source(s)	Notes

Qsn #	Question	Answer
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	[Bird & rodent seed predators may disperse seeds of related species. No evidence of internal dispersal of <i>B. rupestris</i> , although seeds may be regurgitated] "The observations in this study suggest that the use of <i>B. populneus</i> seed by generalist vectors has also facilitated colonization of the weed. In Kings Park, <i>B. populneus</i> was most commonly observed beneath the canopy or close to the trunks of another tree, and in many cases there was clumping of many <i>B. populneus</i> seedlings and saplings around a tree. The dispersal of seeds to these sites by vertebrate seed predators may be responsible for this pattern. Australian ravens were observed on several occasions in flight carrying <i>B. populneus</i> fruit or perched in trees with <i>B. populneus</i> fruit in their beaks. It is possible that ravens, perched in trees feeding on transported fruit, do not consume all the seed, and some seed falls to the ground. The foraging behaviour of black rats may also be responsible for establishment patterns, with caches of eaten and uneaten fruit and seeds observed near the base of trees."

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Eddie, C. 2012. Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields Second Edition. Santos Ltd, Adelaide	[Densities unknown] "Fruit: Brown, woody, thin-walled, boat-shaped pod with a prominent curved beak, 30mm long x 10 – 15mm wide, smooth outside, hairy inside; in clusters of 1 – 5 at the ends of the branches; each pod contains 2 – 8 hard, yellow, egg-shaped seeds"
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	[Related species seeds prolifically] " <i>Brachychiton populneus</i> produces prolific amounts of seed and is in this respect similar to other woody weeds in Australian ecosystems (Weiss 1984; Lonsdale & Segura 1987; Smith & Harlen 1991; Swarbrick et al. 1995; Grice 1996; Scott 1996; Gentle & Duggin 1997). An average-sized reproductive tree produces up to 7000 seeds in one flowering event, and observations of flowering in the years before and after the study suggest that large amounts of seed are produced annually."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. (2018) Seed Information Database (SID). Version 7.1. Available from: <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a> . [Accessed 3 Jan 2018]	"Storage Behaviour: No data available for species. Of 7 known taxa of genus <i>Brachychiton</i> , 100.00% Orthodox(p/?)"
	Buist, M., Yates, C. J., & Ladd, P. G. (2000). Ecological characteristics of <i>Brachychiton populneus</i> (Sterculiaceae (kurrajong) in relation to the invasion of urban bushland in south western Australia. <i>Austral Ecology</i> , 25(5), 487-496	[Related taxon does not form a persistent seed bank] "The ability to form a persistent soil seed bank is not a characteristic of <i>B. populneus</i> . In this study 98% of the seed that was buried in late summer (March) had germinated within 6 months; germination began with the onset of winter rains and continued throughout the wet winter months."

803	Well controlled by herbicides	
	Source(s)	Notes

Qsn #	Question	Answer
	Western Australian Herbarium (1998–2018). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. <a href="https://florabase.dpaw.wa.gov.au/">https://florabase.dpaw.wa.gov.au/</a> . [Accessed 3 Jan 2018]	[Related taxon effectively controlled by herbicides] "Brachychiton populneus ... Suggested method of management and control. Hand pull seedlings. For mature plants try stem injection with 50-100% glyphosate or apply 250 ml Access® in 15 L of diesel to basal 50 cm of trunk (basal bark) or cut and paint with 50% glyphosate."
	WRA Specialist. 2018. Personal Communication	Unknown. No information on herbicide efficacy of chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Paten Park Native Nursery. 2017. <i>Brachychiton rupestris</i> (Qld Bottle tree). <a href="http://www.patenparknativenursery.org.au">http://www.patenparknativenursery.org.au</a> . [Accessed 3 Jan 2018]	"Fire Resistant Plants - Plants which can survive some exposure to fire or will regenerate from seed or suckers after a fire"

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- Broad climate suitability
- Thrives in tropical climates
- Other *Brachychiton* species have become invasive
- Nitrate poisoning may occur if fed to cattle
- Seeds surrounded by irritant hairs
- Moderate flammability; may increase fire risk in fire prone areas
- Tolerates many soil types
- Reproduces by seed
- Hybridizes with other *Brachychiton* species
- Seeds dispersed intentionally by people & possibly by bird & rodent seed predators
- Able to sucker & resprout after fire & probably cutting
- Limited ecological information (esp. reproductive biology) reduces accuracy of risk prediction

Low Risk Traits

- No reports of invasiveness or naturalization
- Unarmed (no spines, thorns, or burrs)
- Provides fodder for livestock (palatable despite potential nitrate toxicity)
- Ornamental
- Not reported to spread vegetatively
- Slow growth rate
- Relatively large seeds unlikely to be accidentally dispersed

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> Unknown. Not known to form dense stands. Shade tolerance unclear (tolerance to partial shade reported)

(B) Bird or clearly wind-dispersed?> Unknown. Possibly dispersed by birds (as are related taxa)

(C) Life cycle <4 years? No

Outcome = Evaluate Further

**TAXON:** *Brachychiton rupestris* (T. Mitch. ex Lindl.) K. Schum.

**SCORE:** 1.0

**RATING:** Evaluate