

Taxon: <i>Erythrina vespertilio</i> Benth.	Family: Fabaceae
Common Name(s): bat-wing coraltree beantree brake-block-pine coraltree corktree grey corkwood heilaman-tree	Synonym(s):

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 11 Jan 2018
WRA Score: -4.0	Designation: L	Rating: Low Risk

Keywords: Tropical Tree, Spiny, Toxic Seeds, N-Fixing, Bird-Pollinated

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed		
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	y
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals		

Qsn #	Question	Answer Option	Answer
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	y
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		
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	y
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators		
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	y=1, n=-1	n
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m ²)	y=1, n=-1	n
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	n
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
	Bean, A. R. (2008). A taxonomic revision of <i>Erythrina</i> L. (Fabaceae: Faboideae) in Australia. <i>Austrobaileya</i> 7(4): 641–658	[No evidence of domestication] " <i>Erythrina vespertilio</i> ... This species is endemic to Australia and comprises two subspecies."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 8 Jan 2018]	"Native: Australasia Australia: Australia - New South Wales, - Queensland, - South Australia, - Western Australia, - Northern Territory"
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. <i>Forest Trees of Australia</i> . CSIRO Publishing, Collingwood, Australia	"The main Australian tree genera in Fabaceae are: <i>Castanospermum</i> , with a single rainforest species, <i>C. australe</i> ; <i>Erythrina</i> which is represented in Australia by <i>E. vespertilio</i> , widespread in the tropical and subtropical regions"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 8 Jan 2018]	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Climate: Altitudinal range: near sea level to 800 m; Hottest/ coldest month: 30–39°C/5–20°C; Frost incidence: variable (frost-free coastal areas to inland areas which receive about 10–15 frosts per year); Rainfall: 150–1700 mm per year, mainly summer max."
	Dave's Garden. 2018. Bat's Wing Coral Tree, Batwing Coral Tree, Bean Tree. <i>Erythrina vespertilio</i> . https://davesgarden.com/guides/pf/go/74310/ . [Accessed 10 Jan 2018]	"Hardiness: USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Bean, A. R. (2008). A taxonomic revision of <i>Erythrina</i> L. (Fabaceae: Faboideae) in Australia. <i>Austrobaileya</i> 7(4): 641–658	" <i>Erythrina vespertilio</i> Benth. subsp. <i>vespertilio</i> ... Distribution and habitat: This subspecies is widespread across northern and north-eastern Australia (Kimberley region of W.A., Top End of N.T. and the eastern half of Qld). In Qld it extends as far north as Thursday Island, and south to around Ipswich" ... " <i>Erythrina vespertilio</i> subsp. <i>biloba</i> ... Distribution and habitat: Widely distributed in central Australia, north of about 28° S latitude, including W.A., N.T., Qld and the far north of S.A."
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"This species has a wide distribution across northern Australia occurring north and south of the Tropic of Capricorn. It is widespread in coastal and inland Queensland, the Northern Territory and the Kimberley and Hamersley regions of Western Australia and extends to northern New South Wales. Reported from near Oodnadatta and Cleland Hill in northern South Australia but not located recently at these sites. Some offshore occurrences include Thursday Island, Queensland, and Dolphin and Barrow Islands, Western Australia."

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Dave's Garden. 2018. Bat's Wing Coral Tree, Batwing Coral Tree, Bean Tree. <i>Erythrina vespertilio</i> . https://davesgarden.com/guides/pf/go/74310/ . [Accessed 10 Jan 2018]	"This plant has been said to grow in the following regions: Phoenix, Arizona Spring Valley, California Mulberry, Florida Freeport, Texas Richmond, Texas"

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	Source(s)	Notes
	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. http://botany.si.edu/ . [Accessed 10 Jan 2018]	No evidence to date

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Unverified. Cited as a Weed. Subsequent searches of the references listed were not able to corroborate the designation as a weed] "W - Weed Most common term used. These plants are nearly always economic weeds (i.e., pests of agriculture, horticulture, turf, nurseries etc.). However when a source is not conclusive in this area then 'weed' is used."

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
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"It is listed as a weed in at least one reference publication, but there does not appear to be any record of it anywhere as a serious weed or invasive species."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[No evidence. Cited as a Weed. Subsequent searches of the references listed were not able to corroborate the designation as a weed] "W - Weed Most common term used. These plants are nearly always economic weeds (i.e., pests of agriculture, horticulture, turf, nurseries etc.). However when a source is not conclusive in this area then 'weed' is used."

305	Congeneric weed	y
	Source(s)	Notes

Qsn #	Question	Answer
	Queensland Government. (2018). Weeds of Australia. <i>Erythrina x sykesii</i> . http://keyserver.lucidcentral.org . [Accessed 10 Jan 2018]	<p>"Common coral tree (<i>Erythrina x sykesii</i>) is regarded as an environmental weed in many parts of New South Wales. It appears on numerous local and regional weed lists in this state (e.g. in the wider Sydney and Blue Mountains region and in the North Coast and South Coast regions) and is currently listed as a priority environmental weed in at least one Natural Resource Management region.</p> <p>This species does not produce viable seed and only propagates vegetatively, via stem segments and suckers. Logs, branches and even twigs will grow into new plants and they break easily, thereby aiding its spread during floods. Common coral tree (<i>Erythrina x sykesii</i>) has spread from garden and street plantings into bushland areas, often aided by the dumping of garden waste. It is primarily a problem along creeks and rivers, but will also grow in disturbed natural vegetation and open woodlands.</p> <p>In New South Wales it has been reported to replace native riparian vegetation, block the flow of creeks, increase creek bank erosion, and cause other trees to fall over. It has also been recorded from conservation areas, including Eurobodalla National Park and Murrumbidgee National Park in the South Coast region. In south-western Western Australia it is reported to grow along river edges between Perth and Bunbury."</p>
	Pittwater Council. 2010. Woody Weeds (Trees and Shrubs) - Cocks Comb Coral Tree. http://www.pittwater.nsw.gov.au . [Accessed 10 Jan 2018]	"Coral Tree (<i>Erythrina crista-galli</i>) is a significant woody weed within the Mullet Creek Catchment. <i>Erythrina crista-galli</i> is easily dispersed by seed and suckering. Branches left on the ground can re-grow into new plants. This species invades natural areas such as creeklines and wetlands. <i>Erythrina crista-galli</i> is a deciduous tree and requires treatment in the growing season. It can be drilled or frilled in-situ and poisoned as felled trees and branches will reshoot if in contact with the ground."

401	Produces spines, thorns or burrs	y
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Bark: Pale, corky, fissured and sometimes with a scattering of short spines." ... "Stem, petioles and leaf edges have sharp thorns up to 0.1–0.2 cm long." ... "Adult—spirally arranged on twigs, which are often spiny, pinnate with 3 leaflets, petiolules 0.4–0.6 cm long."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. No evidence for allelopathy found

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m. Occasionally large specimens reach 30 m tall and 0.8 m diameter." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Edwards, G. P., Zeng, B., Saalfeld, W. K., Vaarzon-Morel, P. & McGregor, M. (2008). Managing the impacts of feral camels in Australia: a new way of doing business. DKCRC Report, 47. Desert Knowledge Cooperative Research Centre, Alice Springs	"Döriges and Heucke (1995, 2003) identified three species whose conservation status they considered to be severely impacted by camel browsing: <i>Erythrina vespertilio</i> , <i>Acacia sessiliceps</i> , and <i>Santalum acuminatum</i> ." ... "Table 7.6: Plant species of central Australia considered vulnerable to local extinction or severe impact as a result of camel browsing" [<i>Erythrina vespertilio</i> - Palatability to camels = Extremely high]
	Lowry, J. B. (2008). Trees for Wood and Animal Production in Northern Australia. RIRDC Publication No 08/164. Rural Industries Research and Development Corporation	[Unknown] " <i>Erythrina vespertilio</i> (bat-wing coral tree). This tree occurs scattered through eucalypt woodlands, suddenly revealed in the late dry season by its crop of red flowers. There is no indication that leaf is browsed (most erythrinans contain alkaloids, but some are fodder trees) but it is completely deciduous and it may be that the fallen leaf is eaten. In this project we found the in vitro fermentability of the fallen leaf to be very high (data not shown)."

405	Toxic to animals	
	Source(s)	Notes
	Johnson, A., & Johnson, S. (2006). Garden plants poisonous to people. Primefact 359. NSW Department of Primary Industries	"Table 2. Poisonous trees ... <i>Erythrina vespertilio</i> ... Poisonous parts - Leaves, bark and seeds. Symptoms (progressive depending on dose) - Nausea, coma, respiratory distress." [Reported to be poisonous to people. Toxicity to animals unknown]
	Edwards, G. P., Zeng, B., Saalfeld, W. K., Vaarzon-Morel, P. & McGregor, M. (2008). Managing the impacts of feral camels in Australia: a new way of doing business. DKCRC Report, 47. Desert Knowledge Cooperative Research Centre, Alice Springs	[No evidence of toxicity to camels] "Table 7.6: Plant species of central Australia considered vulnerable to local extinction or severe impact as a result of camel browsing" [<i>Erythrina vespertilio</i> - Palatability to camels = Extremely high]

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	y
	Source(s)	Notes
	Johnson, A., & Johnson, S. (2006). Garden plants poisonous to people. Primefact 359. NSW Department of Primary Industries	"Table 2. Poisonous trees ... <i>Erythrina vespertilio</i> ... Poisonous parts - Leaves, bark and seeds. Symptoms (progressive depending on dose) - Nausea, coma, respiratory distress."

Qsn #	Question	Answer
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"The leaves, seed and bark are reported to be highly toxic, capable of causing serious illness or death if ingested. Symptoms include nausea, respiratory distress and coma."
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[No evidence, in contrast to other sources] " <i>Erythrina vespertilio</i> ... Bark and bast soaked in water which is applied externally to treat headaches and sore eyes."

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood occurs in a wide range of vegetation types from drier rainforest to desert, and is associated with a diverse range of species." [May add to fuel load if occurring in fire prone areas, but no evidence of fire adaptations or increased fire risk where this species occurs]
	Central Land Council. 2013. Fire Management in Central Australia. A learning resource for Aboriginal community rangers. CLC, Alice Springs	[No evidence that this tree increases fire risk] "Fire sensitive plants. Plants that cannot resprout will be killed in a fire. There needs to be enough time between fires for them to produce seed. Sometimes this can be many years for long-lived plants - some species need up to 30 years." [Bean tree (<i>Erythrina vespertilio</i>) listed among fire sensitive plants]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"It is adapted to well-drained clay, loam and sand soils of a moderately acid to alkaline nature, generally with a pH of 5.0 to 8.0 and performs best on sites with exposure to full or partial sun."
	Dave's Garden. 2018. Bat's Wing Coral Tree, Batwing Coral Tree, Bean Tree. <i>Erythrina vespertilio</i> . https://davesgarden.com/guides/pf/go/74310/ . [Accessed 10 Jan 2018]	"Sun Exposure: Full Sun"
	Top Tropicals. 2018. <i>Erythrina vespertilio</i> . https://toptropicals.com/catalog/uid/erythrina_vespertilio.htm . [Accessed 10 Jan 2018]	Full sun, semi-shade

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Bean, A. R. (2008). A taxonomic revision of <i>Erythrina</i> L. (Fabaceae: Faboideae) in Australia. <i>Austrobaileya</i> 7(4): 641–658	" <i>Erythrina vespertilio</i> subsp. <i>biloba</i> ... It grows on a wide range of soil types, often in locations that receive extra water e.g. base of rocky hills, creek banks etc."
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"It is adapted to well-drained clay, loam and sand soils of a moderately acid to alkaline nature, generally with a pH of 5.0 to 8.0 and performs best on sites with exposure to full or partial sun. It has poor tolerance to slow-draining or waterlogged soils, or strong wind conditions."

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m. Occasionally large specimens reach 30 m tall and 0.8 m diameter. The stem is not buttressed. The leaves resemble batwings and make this species a conspicuous tree in northern Australia."

412	Forms dense thickets	n
	Source(s)	Notes
	Krukoff, B. A. (1972). Notes on Asiatic-Polynesian-Australian species of <i>Erythrina</i> , II. Journal of the Arnold Arboretum, 53(1), 128-139	"It is confined to tropical and subtropical Australia (Western Australia, Northern Territory, Queensland, and New South Wales)." [No evidence]
	Lowry, J. B. (2008). Trees for Wood and Animal Production in Northern Australia. RIRDC Publication No 08/164. Rural Industries Research and Development Corporation	"This tree occurs scattered through eucalypt woodlands, suddenly revealed in the late dry season by its crop of red flowers."
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[No evidence. Associated with a diversity of species] "Grey corkwood occurs in a wide range of vegetation types from drier rainforest to desert, and is associated with a diverse range of species."

501	Aquatic	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[Terrestrial tree] "Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m." ... "Grey corkwood occurs in a wide range of vegetation types from drier rainforest to desert, and is associated with a diverse range of species."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 8 Jan 2018]	Family: Fabaceae (alt.Leguminosae) Subfamily: Faboideae Tribe: Phaseoleae

Qsn #	Question	Answer
503	Nitrogen fixing woody plant	y
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m."
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 8 Jan 2018]	Family: Fabaceae (alt.Leguminosae) Subfamily: Faboideae Tribe: Phaseoleae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m. Occasionally large specimens reach 30 m tall and 0.8 m diameter. The stem is not buttressed."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[No evidence] "This species has a wide distribution across northern Australia occurring north and south of the Tropic of Capricorn. It is widespread in coastal and inland Queensland, the Northern Territory and the Kimberley and Hamersley regions of Western Australia and extends to northern New South Wales. Reported from near Oodnadatta and Cleland Hill in northern South Australia but not located recently at these sites. Some offshore occurrences include Thursday Island, Queensland, and Dolphin and Barrow Islands, Western Australia."

602	Produces viable seed	y
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm."
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"New plants are mostly grown from hardwood cutting, though they can also be raised from seed, with scarification recommended to improve germination."
	Australian Native Plant Society. 2018. <i>Erythrina vespertilio</i> . http://anpsa.org.au/e-ves.html . [Accessed 10 Jan 2018]	"Propagation is from seed or cuttings. Generally no seed treatment is required but light scarification may assist germination."

603	Hybridizes naturally	
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Qsn #	Question	Answer
	Source(s)	Notes
	Neill, D. A. (1988). Experimental studies on species relationships in <i>Erythrina</i> (Leguminosae: Papilionoideae). <i>Annals of the Missouri Botanical Garden</i> , 75(3): 886-969	[Possibly. Artificial crosses between <i>E. guatemalensis</i> & <i>E. vespertilio</i> produces a few viable seeds] "Experimental interspecific hybridizations and self-compatibility trials were conducted using cultivated trees at several botanical gardens in Hawaii." ... "At greater taxonomic distances between the parental species (between sections and subgenera), crossability, viability, and fertility of the hybrid progeny are generally lower than in intrasectional hybridizations. Some hybrids were obtained between species of different subgenera indigenous to different continents. There are probably no absolute internal barriers to hybridization among all the diploid species of <i>Erythrina</i> "

604	Self-compatible or apomictic	
	Source(s)	Notes
	Neill, D. A. (1988). Experimental studies on species relationships in <i>Erythrina</i> (Leguminosae: Papilionoideae). <i>Annals of the Missouri Botanical Garden</i> , 75(3): 886-969	[Possibly Self-compatible. <i>E. vespertilio</i> not tested in this study] "There is thus no reliable evidence for genetic self-incompatibility in any species of <i>Erythrina</i> . It appears safe to assume that genetic self-incompatibility at least the classical single-locus, multiple S-allele, stigma- or style-mediated model of self-incompatibility (Nettancourt, 1977) is completely absent from the 112 species in the genus. If this is true, it would invalidate some of the evidence that Arroyo (1981) advanced to support her assertion that tropical woody Papilionoideae are predominantly self-incompatible"

Qsn #	Question	Answer
605	Requires specialist pollinators	
	Source(s)	Notes
	Williams, G. & Adam, P. 2010. The Flowering of Australia's Rainforests: A Plant and Pollination Miscellany. CSIRO Publishing, Collingwood, Australia	" ... there are several Australian tropical and subtropical rainforest trees with floral characters that meet the criteria for putative bird-pollination syndromes (e.g. Alloxyylon pinnatum, Grevillea robusta, Stenocarpus sinuatus [Proteaceae J, Brachychiton acerifolius (Sterculiaceae J, Erythrina vespertilio and Castanospermum austral [Fabaceae])." [Avifauna in Hawaiian Islands probably suited for such pollination]
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Inflorescences: Terminal or axillary racemes up to 25 cm long, flowers large, pedicels slender, about 1–1.5 cm long. Calyx cylindrical about 1.5 cm long, splitting along one side. Petals red or orange, variable in size, the largest petal (standard) about 3 × 1.5 cm, marked by numerous longitudinal veins, other petals much smaller (about 1 cm long). Stamens 10, filaments about 3 cm long, 9 filaments fused for the greater part of their length and 1 filament free. Anthers versatile, about 0.3 × 0.1 cm. Ovary stalked, 1-celled, with 6 ovules. Style about 1.5 cm long, approximately the length of the stamens, base covered in a mass of brown hairs. Flowers Jul.–Nov."
	Storr, G. M. (1984). Birds of the Pilbara Region, Western Australia. Records of the Western Australian Museum No 16. Perth, Western Australia	"Meliphaga penicillata ... White-plumed Honeyeater ... attracted to flowering river gums, bloodwoods, Hakea suberea and Erythrina vespertilio" ... "Manorina flavigula ... Yellow-throated Miner ... attracted to flowering Erythrina vespertilio," ... "Acanthopneuste rufogularis ... Spiny-cheeked Honeyeater ...attracted to flowering Erythrina vespertilio."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Australian Native Plant Society. 2018. Erythrina vespertilio. http://anpsa.org.au/e-ves.html . [Accessed 11 Jan 2018]	"Propagation is from seed or cuttings. Generally no seed treatment is required but light scarification may assist germination." [No evidence of natural vegetative spread]

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Northern Land Manager. 2011. Fire responses of Erythrina vespertilio. http://www.landmanager.org.au/fire-responses-erythrina-vespertilio . [Accessed 11 Jan 2018]	"First seeds: 6-20 years"
	iplantz. 2018. Erythrina vespertilio. http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"It is fast-growing and reaches heights of up to 30 m (98 ft) in parts of its range, with a straight trunk of 85 cm (2.8 ft) diameter and without branches for most of its height, though it is more typically 5 to 15 m (16 to 50 ft) tall and develops a moderately branched, narrowly rounded crown." [Time to maturity unspecified]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No evidence. No means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	iplantz. 2018. <i>Erythrina vespertilio</i> . http://www.iplantz.com/plant/967/erythrina-vespertilio/ . [Accessed 10 Jan 2018]	"It is cultivated as an ornamental for its showy salmon-red flowers and unusual and curiously shaped leaves. The flowers produce abundant nectar that nourishes nectar-feeding birds in its native range, including hummingbirds."
	Dave's Garden. 2018. Bat's Wing Coral Tree, Batwing Coral Tree, Bean Tree. <i>Erythrina vespertilio</i> . https://davesgarden.com/guides/pf/go/74310/ . [Accessed 10 Jan 2018]	"This plant has been said to grow in the following regions: Phoenix, Arizona Spring Valley, California Mulberry, Florida Freeport, Texas Richmond, Texas"

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No evidence. Unlikely given relatively large fruit & seed size]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No evidence]

705	Propagules water dispersed	
	Source(s)	Notes
	Bean, A. R. (2008). A taxonomic revision of <i>Erythrina</i> L. (Fabaceae: Faboideae) in Australia. <i>Austrobaileya</i> 7(4): 641–658	"It grows on a wide range of soil types, often in locations that receive extra water e.g. base of rocky hills, creek banks etc." [Distribution along creek banks suggests water may facilitate dispersal]
	Craib, C. (2008). <i>Erythrina zeyheri</i> in eastern Gauteng and western Mpumalanga, South Africa. <i>Cactus and Succulent Journal</i> , 80(2), 86-89	[Other <i>Erythrina</i> species moved by water] "Successful recruitment of young plants depends on hot weather and rain. Heat permits the seed pods to mature and split open, and rain serves to disperse liberated seed in runoff. Germination is best if rain and cloudy weather last for several days after seed dispersal, but these optimum conditions are rarely met."

706	Propagules bird dispersed	n
	Source(s)	Notes

Qsn #	Question	Answer
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No evidence. Not fleshy-fruited, although red color may be attractive to birds]
707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No means of external attachment]
708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [No evidence that seeds are consumed or internally dispersed]
801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Grey corkwood is usually a small to medium-sized tree attaining a height of 15 m and a diameter of 0.3 m." ... "Fruits: Legumes about 12 × 1–1.5 cm, seeds 4–6, orange or red, reniform about 1.2 × 0.6 cm." [Unlikely. Relatively small tree & seeds relatively large]
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Australian Native Plant Society. 2018. <i>Erythrina vespertilio</i> . http://anpsa.org.au/e-ves.html . [Accessed 11 Jan 2018]	"Propagation is from seed or cuttings. Generally no seed treatment is required but light scarification may assist germination" [Longevity in natural environment unknown]
	Royal Botanic Gardens Kew. (2018) Seed Information Database (SID). Version 7.1. Available from: http://data.kew.org/sid/ . [Accessed 11 Jan 2018]	"Storage Behaviour: Orthodox Storage Conditions: 23% germination following 15 years open storage at room temperature (Ewart, 1908)"
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. No information found on herbicide efficacy or chemical control for his species.
804	Tolerates, or benefits from, mutilation, cultivation, or fire	n
	Source(s)	Notes

Qsn #	Question	Answer
	Central Land Council. 2013. Fire Management in Central Australia. A learning resource for Aboriginal community rangers. CLC, Alice Springs	"Fire sensitive plants. Plants that cannot resprout will be killed in a fire. There needs to be enough time between fires for them to produce seed. Sometimes this can be many years for long-lived plants - some species need up to 30 years." [Bean tree (<i>Erythrina vespertilio</i>) listed among fire sensitive plants]
	Nano, C., & Clarke, P. (2011). How do drought and fire influence the patterns of resprouting in Australian deserts? <i>Plant Ecology</i> , 212(12), 2095-2110	"Table 4 Categorisation of 225 woody species recorded in 385 sample plots of <i>Triodia</i> grassland or <i>Acacia</i> shrubland habitats in central Australia" ... " <i>Erythrina vespertilio</i> - Vegetative Persistence = R- ; Propagule persistence = P-" [R- = non-resprouter; P- = species without propagule persistence]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Messing, R. H., Noser, S., & Hunkeler, J. (2009). Using host plant relationships to help determine origins of the invasive <i>Erythrina</i> gall wasp, <i>Quadrastichus erythrinae</i> Kim (Hymenoptera: Eulophidae). <i>Biological Invasions</i> , 11(10), 2233–2241	[Unknown if <i>Erythrina vespertilio</i> is affected] "The <i>Erythrina</i> gall wasp has recently invaded a wide swath of Asian and Pacific countries, causing severe damage to several species of <i>Erythrina</i> trees. It poses an imminent threat to native <i>Erythrina</i> species in Latin America, Asia, Australia and the Pacific. While an African origin of the pest is presumed, it's exact home on the continent remains unknown. We examined host plant relationships of the wasp using 71 of the world's species of <i>Erythrina</i> that are planted in the botanical gardens of Hawaii. Observational and experimental data indicate that species endemic to Africa are more resistant to the wasp than those from other continents. Complete absence of galling on all <i>Erythrina</i> native to Benin, Burundi, Congo, Gambia, Lesoto, Rwanda, and Somalia make those countries highly unlikely to be the origin of the wasp. Mozambique, South Africa, Swaziland, and Zimbabwe were also shown to be unlikely sources. We present susceptibility indices of all 71 <i>Erythrina</i> species, including a number of economically useful trees, and we provide a warning for several species of conservation concern...We found a wide range of susceptibility to gall wasp damage among Latin America's native <i>Erythrina</i> species (Appendix 1)."

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Reported as a weed within native range (unverified)
- Other species have become invasive
- Spiny
- Seeds reported to be toxic to humans (toxicity to animals unknown)
- Tolerates many soil types
- N-fixing (may alter soil chemistry)
- Reproduces by seeds
- May be self-compatible
- Seeds probably dispersed by water & intentionally by people
- Seeds able to be stored for extended periods; May form a persistent seed bank

Low Risk Traits

- No reports of naturalization
- Palatable to browsing animals (e.g. feral camels)
- Ornamental
- Not reported to spread vegetatively
- Seeds relatively large & unlikely to be accidentally dispersed