

Taxon: *Adenanthos detmoldii* F.Muell.

Family: Proteaceae

Common Name(s): Scott River jugflower
yellow jugflower

Synonym(s): NA

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 19 May 2020

WRA Score: -4.0

Designation: L

Rating: Low Risk

Keywords: Temperate Shrub, Unarmed, Non-Toxic, Ornamental, 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)	Intermediate
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	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	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)	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		
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		
408	Creates a fire hazard in natural ecosystems		
409	Is a shade tolerant plant at some stage of its life cycle		

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	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)		
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)		
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)	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		
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
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	[No evidence] "Now largely confined to roadsides. It is distinguished by its yellow flowers and gland-spotted leaves. The hybrid with <i>A. obovatus</i> is frequent (see <i>A. x pamela</i> below)."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	NA
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2020). 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"	Intermediate
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats." [Climate of region is warm and temperate]
202	Quality of climate match data	High
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Australian Native Plant Society. (2020). <i>Adenanthos detmoldii</i> . http://anpsa.org.au/a-det.html . [Accessed 18 May 2020]	"Despite its natural habitat in a dry summer climate, <i>A. detmoldii</i> has been successfully cultivated in a range of climates including those with humid summer conditions which are often unsuitable for plants from the south-west. However, it cannot be said to be easy to maintain in such areas."
	Aerulean. (2020). <i>Adenanthos detmoldii</i> . https://www.aerulean.com/plants/145 . [Accessed 18 May 2020]	"USDA Zones: zone 9 to +20 f, zone 10 to +30 f"
204	Native or naturalized in regions with tropical or subtropical climates	n

Qsn #	Question	Answer
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats."
	Australian Native Plants. (2020). <i>Adenanthos detmoldii</i> . https://www.australianplants.com . [Accessed 18 May 2020]	"Origin: Mediterranean Climate"

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Dave's Garden. (2020). <i>Adenanthos detmoldii</i> . https://davesgarden.com/guides/pf/go/59382/ . [Accessed 18 May 2020]	"This plant has been said to grow in the following regions: San Leandro, California"
	WRA Specialist. (2020). Personal Communication	Limited evidence of introduction outside native range

301	Naturalized beyond native range	n
	Source(s)	Notes
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

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

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

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

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	[No evidence] "Erect shrub to 4 m tall, without lignotuber; branches densely hirsute, glabrescent; leaf-scars prominent. Leaves linear-lanceolate, to 80 mm long, c. 5 mm wide, with numerous, scattered, tuberculate glands. Involucral bracts villose outside. Perianth c. 25 mm long, yellow, with dense felt of yellow hairs outside; throat orange, becoming brown after pollination; in bud the apex acute and upturned. Style 40 mm long, with long, divaricate, yellow hairs; pollen presenter brown; ovary slightly hirsute."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Erect shrub to 4 m tall, without lignotuber; branches densely hirsute, glabrescent; leaf-scars prominent." [Proteaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes
	What Flower. (2020). <i>Adenanthos</i> . https://whatflower.net/houseplant/adenanthos/ . [Accessed 19 May 2020]	"The plant is not poisonous, but can cause an allergic reaction."
	Quattrocchi, U. (2017). CRC World Dictionary of Palms: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
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Qsn #	Question	Answer
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	Notes
	What Flower. (2020). Adenanthos. https://whatflower.net/houseplant/adenanthos/ . [Accessed 19 May 2020]	"The plant is not poisonous, but can cause an allergic reaction." [Generic description. No further details provided on which species may be allergenic]
	Quattrocchi, U. (2017). CRC World Dictionary of Palms: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	
	Source(s)	Notes
	P.H.Weston, (1995). Adenanthos, Flora of Australia 16: 318-342	"Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats." [No evidence, and occurrence in wet substrate suggests fire may be rare in its natural range]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Australian Native Plant Society. (2020). Adenanthos detmoldii. http://anpsa.org.au/a-det.html . [Accessed 18 May 2020]	" It prefers well drained, light soils in full sun or dappled shade. The foliage may be subject to grey mold in humid conditions."
	Aerulean. (2020). Adenanthos detmoldii. https://www.aerulean.com/plants/145 . [Accessed 18 May 2020]	"Exposure: part shade, sun"
	Dave's Garden. (2020). Adenanthos detmoldii. https://davesgarden.com/guides/pf/go/59382/ . [Accessed 18 May 2020]	"Sun Exposure: Sun to Partial Shade"

Qsn #	Question	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2020). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 18 May 2020]	"Grey or black peaty sand, wet. Swamps, roadsides."
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Grows in wet, sandy flats."
	Aerulean. (2020). <i>Adenanthos detmoldii</i> . https://www.aerulean.com/plants/145 . [Accessed 18 May 2020]	"Soil type: well drained"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Erect shrub to 4 m tall, without lignotuber; branches densely hirsute, glabrescent; leaf-scars prominent."

412	Forms dense thickets	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	[No evidence] "Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats. Flowers Aug–Nov. Map 357. W.A.: Scott River Rd, S.Paust 261 (PERTH); Blackwood R., Mrs McHard (K); Scott River area, E of Augusta, E.C.Nelson ANU 16876 (CANB, DBN); Scott River Rd, E of Augusta, 20 Dec. 1984, P.E.Sanderson & E.C.Nelson (DBN). Now largely confined to roadsides."

501	Aquatic	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	[Terrestrial] "Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats." ... "Now largely confined to roadsides."

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 18 May 2020]	Family: Proteaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes

Qsn #	Question	Answer
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 18 May 2020]	Family: Proteaceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Erect shrub to 4 m tall, without lignotuber; branches densely hirsute, glabrescent; leaf-scars prominent. Leaves linear-lanceolate, to 80 mm long, c. 5 mm wide, with numerous, scattered, tuberculate glands."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2020). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 18 May 2020]	"Conservation code Priority Four (P4)." [P4: Priority Four – Rare Taxa - These are taxa that have been adequately surveyed, and are rare but not known to be under threat.]

602	Produces viable seed	y
	Source(s)	Notes
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	" <i>Adenanthos</i> - This genus contains shrubs and groundcover plants noted for their inability to produce abundant seeds. The seeds are difficult to locate and require the use of seed traps placed around the plants for a lengthy period. Flowering and fruiting occurs throughout the year and this makes timing of seed collection difficult. <i>Adenanthos</i> species are often propagated by cuttings."
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Fruit an achene" [Generic description]
	What Flower. (2020). <i>Adenanthos</i> . https://whatflower.net/houseplant/adenanthos/ . [Accessed 19 May 2020]	[Generic description] "Seed propagation is used, the seeds must pass stratification, that is, they must be kept in the refrigerator for 2 months at a temperature of + 50 ° F, placing them in moist sand. Subsequently, the seeds are germinated in a mixture of peat and sand at a temperature of + 68 75 ° F. Seeds are covered with polyethylene. It sprouts for about 1-2 months. For better germination, you can apply scarification, that is, remove the shell from the seeds. After that they germinate in a sterile environment, for example, in vermiculite."

Qsn #	Question	Answer
603	Hybridizes naturally	y
	Source(s)	Notes
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"The hybrid with <i>A. obovatus</i> is frequent (see <i>A. × pamela</i> below)." ... " <i>Adenanthos × pamela</i> ... Occurs only in the Scott River area, W.A., where the parent species <i>A. detmoldii</i> and <i>A. obovatus</i> grow together."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Goldingay, R. L., & Carthew, S. M. (1998). Breeding and mating systems of Australian Proteaceae. <i>Australian Journal of Botany</i> , 46(4), 421-437	[Family description. No specifics provided for <i>Adenanthos</i>] "Self-compatibility may be more common in other genera, although a dearth of studies precludes generalisation. Assessment of mating systems indicates almost complete outcrossing for most species, lending support to the idea of selective fruit development. It is clear that many further studies of all topics are required but particularly across a wide range of genera because many have not been studied at all."
	Wooller, R. D., & Wooller, S. J. (1998). Consistent individuality in the timing and magnitude of flowering by <i>Adenanthos obovatus</i> (Proteaceae). <i>Australian Journal of Botany</i> , 46(6), 595-608	[Unknown. Possibly low seed set after selfing] "Self-incompatibility is widespread in the Proteaceae, albeit not universal (Vaughton 1988; Ramsey and Vaughton 1991) and Keighery (1982) classified <i>Adenanthos</i> as modally outbreeding, with low seed set on selfing."

605	Requires specialist pollinators	
	Source(s)	Notes
	Australian Native Plant Society. (2020). <i>Adenanthos detmoldii</i> . http://anpsa.org.au/a-det.html . [Accessed 18 May 2020]	"The flowers produce nectar and attract honeyeating birds."
	Keighery, G. (1980). Bird Pollination in South Western Australia: A Checklist. <i>Plant Systematics and Evolution</i> , 135(3/4), 171-176	[All <i>Adenanthos</i> species bird-pollinated. Unknown if birds present in Hawaiian Islands would effectively pollinate these species] "Table 1. Systematic Distribution of Bird Pollinated Species" [<i>Adenanthos</i> - Number of species bird pollinated = 20; Number of insects pollinated = 0; Total species in genus for Southern W .A.= 20]

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Australian Native Plant Society. (2020). <i>Adenanthos detmoldii</i> . http://anpsa.org.au/a-det.html . [Accessed 19 May 2020]	"Propagation is reasonably easy from cuttings using firm, current season's growth." [No evidence of natural vegetative spread]
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 <i>Adenanthos</i>	[<i>Adenanthos detmoldii</i> lacks a lignotuber and presumably reproduces from seed] "Many <i>Adenanthos</i> are obligate seeders, being killed by fire and relying on soil-stored seed to regenerate (e.g. <i>A. cygnorum</i> and <i>A. sericeus</i>). They may be considered as disturbance opportunists and pioneer species in regenerating native vegetation. A number of other species can resprout from rootstocks after fire (e.g. <i>A. cuneatus</i> , <i>A. meisneri</i> and <i>A. flavidiflorus</i>)."

Qsn #	Question	Answer
607	Minimum generative time (years)	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Nelson, E. C. (1977). A taxonomic revision of the genus <i>Adenanthos</i> (Proteaceae). <i>Brunonia</i> , 1(3), 303-406	"In some species, the fruits fall to the ground immediately but, in other species, they may be retained on the plant. The fruits are not apparently adapted for dispersal over long distances by any obvious agency."
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 <i>Adenanthos</i>	"The fruit of <i>Adenanthos</i> is a dry, indehiscent nut or achene. It is ellipsoid in shape and is released when the bracts dry and spread out. Fruits range in size from three to eight millimetres long and one to two millimetres wide. The outer fruit wall is hard and brittle and coloured light to dark brown when ripe. The endosperm is white, moist and firm. The seed is highly nutritious and it is likely that birds and rodents predate fruits. Ant dispersal of the seed to nests protects the seed from predation until soil disturbance results in mass regeneration of obligate seeding species"

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Dave's Garden. (2020). <i>Adenanthos detmoldii</i> . https://davesgarden.com/guides/pf/go/59382/ . [Accessed 19 May 2020]	"This plant has been said to grow in the following regions: San Leandro, California"
	WRA Specialist. (2020). Personal Communication	Available through commercial websites. Apparently not widely cultivated

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 <i>Adenanthos</i>	"The fruit of <i>Adenanthos</i> is a dry, indehiscent nut or achene. It is ellipsoid in shape and is released when the bracts dry and spread out. Fruits range in size from three to eight millimetres long and one to two millimetres wide. The outer fruit wall is hard and brittle and coloured light to dark brown when ripe. The endosperm is white, moist and firm. The seed is highly nutritious and it is likely that birds and rodents predate fruits. Ant dispersal of the seed to nests protects the seed from predation until soil disturbance results in mass regeneration of obligate seeding species."
	Sweedman, L. & Merritt, D. 2006. <i>Australian seeds: a guide to their collection, identification and biology</i> . Csiro Publishing, Collingwood, Australia	[No evidence] "This genus contains shrubs and groundcover plants noted for their inability to produce abundant seeds. The seeds are difficult to locate and require the use of seed traps placed around the plants for a lengthy period."

704	Propagules adapted to wind dispersal	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 Adenanthos	"The fruit of Adenanthos is a dry, indehiscent nut or achene."
	Nelson, E. C. (1977). A taxonomic revision of the genus Adenanthos (Proteaceae). Brunonia, 1(3), 303-406	"The fruits are not apparently adapted for dispersal over long distances by any obvious agency."

705	Propagules water dispersed	
	Source(s)	Notes
	P.H.Weston, (1995). Adenanthos, Flora of Australia 16: 318-342	"Endemic in the Scott River area, east of Augusta, W.A. Grows in wet, sandy flats." [Habitat suggests water could play a role as a secondary mode of dispersal]
	Nelson, E. C. (1977). A taxonomic revision of the genus Adenanthos (Proteaceae). Brunonia, 1(3), 303-406	"The fruits are not apparently adapted for dispersal over long distances by any obvious agency."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 Adenanthos	"The outer fruit wall is hard and brittle and coloured light to dark brown when ripe. The endosperm is white, moist and firm. The seed is highly nutritious and it is likely that birds and rodents predate fruits."
	Nelson, E. C. (1977). A taxonomic revision of the genus Adenanthos (Proteaceae). Brunonia, 1(3), 303-406	[No evidence. Not fleshy-fruited] "The fruits are not apparently adapted for dispersal over long distances by any obvious agency. Drupes are not present in the genus, as Bentham (1870) had suggested."

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Nelson, E. C. (1977). A taxonomic revision of the genus Adenanthos (Proteaceae). Brunonia, 1(3), 303-406	"The fruits are not apparently adapted for dispersal over long distances by any obvious agency. Drupes are not present in the genus, as Bentham (1870) had suggested."
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 Adenanthos	[Generic description. Possibly ant-dispersed] "Ant dispersal of the seed to nests protects the seed from predation until soil disturbance results in mass regeneration of obligate seeding species."

Qsn #	Question	Answer
708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 Adenanthos	"The fruit of Adenanthos is a dry, indehiscent nut or achene. It is ellipsoid in shape and is released when the bracts dry and spread out. Fruits range in size from three to eight millimetres long and one to two millimetres wide. The outer fruit wall is hard and brittle and coloured light to dark brown when ripe. The endosperm is white, moist and firm. The seed is highly nutritious and it is likely that birds and rodents predate fruits. Ant dispersal of the seed to nests protects the seed from predation until soil disturbance results in mass regeneration of obligate seeding species."
	Nelson, E. C. (1977). A taxonomic revision of the genus Adenanthos (Proteaceae). Brunonia, 1(3), 303-406	[No evidence] "The fruits are not apparently adapted for dispersal over long distances by any obvious agency."

801	Prolific seed production (>1000/m ²)	n
	Source(s)	Notes
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 Adenanthos	"Parthenocarpy, or the production of fruit without seed, is a common phenomenon in the genus Adenanthos. Seed abortion is also widespread. This may be due to limiting factors such as resources (e.g. nutrients, pollen), pollinators or genetic reasons (for instance, self-pollination in outcrossing species)."
	Australian Native Plant Society. (2020). Adenanthos detmoldii. http://anpsa.org.au/a-det.html . [Accessed 19 May 2020]	"Propagation is reasonably easy from cuttings using firm, current season's growth." [Presumably propagated with cuttings due to ease of method, and difficulty in obtaining seeds. See Sweedman and Merritt (2006)]
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	[Generic description] "This genus contains shrubs and groundcover plants noted for their inability to produce abundant seeds. The seeds are difficult to locate and require the use of seed traps placed around the plants for a lengthy period. Flowering and fruiting occurs throughout the year and this makes timing of seed collection difficult. Adenanthos species are often propagated by cuttings."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes

Qsn #	Question	Answer
	P.H.Weston, (1995). <i>Adenanthos</i> , Flora of Australia 16: 318-342	"Erect shrub to 4 m tall, without lignotuber" [Lack of lignotuber suggests plant may not be adapted to resprouting after cutting or fire]
	Wildflower Society of Western Australia. (2008). Seed Notes for Western Australia. No. 4 <i>Adenanthos</i>	[<i>Adenanthos detmoldii</i> lacks a lignotuber and presumably regenerates from seed] "Many <i>Adenanthos</i> are obligate seeders, being killed by fire and relying on soil-stored seed to regenerate (e.g. <i>A. cygnorum</i> and <i>A. sericeus</i>). They may be considered as disturbance opportunists and pioneer species in regenerating native vegetation. A number of other species can resprout from rootstocks after fire (e.g. <i>A. cuneatus</i> , <i>A. meisneri</i> and <i>A. flavidiflorus</i>)."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2020). Personal Communication	NA

Summary of Risk Traits:

High Risk / Undesirable Traits

- Reports that some species may cause an allergic reaction
- Reproduces by seed, although seed production may be limited
- Seeds possibly dispersed by ants, and intentionally by people
- Gaps in biological and ecological information may reduce accuracy of risk prediction

Low Risk Traits

- No reports of invasiveness or naturalization, but no evidence of widespread introduction outside native range
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Limited seed production reported in genus
- Not reported to spread vegetatively
- Fruits not adapted for long distance dispersal