

Taxon: *Alyogyne huegelii* (Endl.) Fryxell

Family: Malvaceae

Common Name(s): lilac hibiscus

Synonym(s): *Hibiscus huegelii* var. *wrayae* (Lindl.)
Hibiscus wrayae Lindl.

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 3 May 2018

WRA Score: -2.0

Designation: L

Rating: Low Risk

Keywords: Shrub, Ornamental, Unarmed, Non-Toxic, Insect-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	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)	n
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		
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	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets		
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
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)	y=1, n=-1	n
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
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
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	[No evidence of domestication] "Alyogyne huegelii is a variable species. Florabase (Western Australia) lists 5 varietal forms, two of which represent the reduction to varietal status of forms previously described as separate species in the genus Hibiscus." ... "Alyogyne huegelii is in cultivation, primarily in Australia and the SW USA, but also in Europe, where it is grown as a conservatory plant."

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"	Intermediate
	Source(s)	Notes
	Burke, D. 2005. The Complete Burke's Backyard: The Ultimate Book of Fact Sheets. Murdoch Books, Millers Point, Australia	"It will grow throughout most of Australia except the tropical north and the cooler mountainous areas." [tolerant of sub-tropical climates]
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 3 May 2018]	"Native Australasia AUSTRALIA: Australia [South Australia (s.), Western Australia (s. & w.)]"

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 3 May 2018]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Dave's Garden. (2018). Blue Hibiscus, Lilac Hibiscus, Purple Hibiscus, California Hibiscus - <i>Alyogyne huegelii</i> . https://davesgarden.com/guides/pf/go/31420/ . [Accessed 3 May 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)"
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"It is described as suitable for USDA zones 9 and 10, though in wet areas it may be necessary to grow it in containers, or to graft it onto other species of <i>Hibiscus</i> . Although it has a degree of frost tolerance, and has been reported to tolerate 12°C of frost for short periods without permanent damage, it is not be suitable for growing in the ground in temperate climates, either due to longer and deeper periods of frost in continental climates, or to winter wet in maritime climates. In such climates there is the option of growing the plant as a conservatory or patio shrub. In mild areas grown as a wall shrub with a sheltered sunny aspect and a well drained soil it may survive for a few years, but will probably be seen off by the first cold or wet winter."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"Although it has a degree of frost tolerance, and has been reported to tolerate 12°C of frost for short periods without permanent damage, it is not be suitable for growing in the ground in temperate climates, either due to longer and deeper periods of frost in continental climates, or to winter wet in maritime climates."
	Burke, D. 2005. The Complete Burke's Backyard: The Ultimate Book of Fact Sheets. Murdoch Books, Millers Point, Australia	"It will grow throughout most of Australia except the tropical north and the cooler mountainous areas." [tolerant of sub-tropical climates]
	USDA, ARS, Germplasm Resources Information Network. 2018. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 3 May 2018]	"Native Australasia AUSTRALIA: Australia [South Australia (s.), Western Australia (s. & w.)]"

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.htm . [Accessed 3 May 2018]	"Alyogyne huegelii is in cultivation, primarily in Australia and the SW USA, but also in Europe, where it is grown as a conservatory plant."
	Dave's Garden. (2018). Blue Hibiscus, Lilac Hibiscus, Purple Hibiscus, California Hibiscus - <i>Alyogyne huegelii</i> . https://davesgarden.com/guides/pf/go/31420/ . [Accessed 3 May 2018]	"This plant has been said to grow in the following regions: El Mirage, Arizona Phoenix, Arizona Scottsdale, Arizona Tucson, Arizona Berkeley, California Carlsbad, California Castro Valley, California Citrus Heights, California Clayton, California Fallbrook, California La Jolla, California Laguna Beach, California Modesto, California Oak View, California Rancho Mirage, California Redding, California Rocklin, California Sacramento, California San Francisco, California Shasta Lake, California Stockton, California Austin, Texas Houston, Texas Richmond, Texas Victoria, Texas"

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 3 May 2018]	No evidence to date

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
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	[No evidence] "Shrub to 3 m. slender. erect. clonal in habit. sparsely to densely hairy with hairs branched and star-like. Leaves stalked, deeply 5-lobed, 30-80 mm long and 20-90 mm wide, the lobes often irregularly toothed, sparsely hairy."

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

403	Parasitic	n
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Shrub to 3 m. slender. erect. clonal in habit. sparsely to densely hairy with hairs branched and star-like. Leaves stalked, deeply 5-lobed, 30-80 mm long and 20-90 mm wide, the lobes often irregularly toothed, sparsely hairy." [Malvaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Yanker-Hansen, K. 2000. Marvelous Mallows. Pacific Horticulture April 2000. https://www.pacifichorticulture.org/articles/marvelous-mallows/ . [Accessed 3 May 2018]	"Alyogyne huegelii, are known to survive the deer, but not in every garden."
	Australian Plants online. 2002. Alyogyne: An Update. http://anpsa.org.au/APOL28/dec02-1.html . [Accessed 3 May 2018]	"Luen Miller from Monterey Bay Nursery in California (W3) reports that plants that were browsed by deer in drought conditions developed into dense, thick, dome-shaped plants about 1.5 m (5') tall and 2.4 m (8') across and were completely covered with purple flowers."
	Dave's Garden. (2018). Blue Hibiscus, Lilac Hibiscus, Purple Hibiscus, California Hibiscus - Alyogyne huegelii. https://davesgarden.com/guides/pf/go/31420/ . [Accessed 3 May 2018]	"On May 21, 2013, nathanieledison from Santa Rosa, CA (Zone 9b) wrote: ... s was stated, deer LOVE them and will munch down as much of it as they can."

405	Toxic to animals	n
	Source(s)	Notes

Qsn #	Question	Answer
	Dave's Garden. (2018). Blue Hibiscus, Lilac Hibiscus, Purple Hibiscus, California Hibiscus - <i>Alyogyne huegelii</i> . https://davesgarden.com/guides/pf/go/31420/ . [Accessed 3 May 2018]	"Deer love these so plant accordingly!" [No evidence]
	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
	NIH U.S. National Library of Medicine. 2018. TOXNET Toxicology Data Network. https://toxnet.nlm.nih.gov/ . [Accessed 3 May 2018]	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Australian Plants online. 2002. <i>Alyogyne</i> : An Update. http://anpsa.org.au/APOL28/dec02-1.html . [Accessed 3 May 2018]	" <i>Alyogyne</i> is usually not troubled by pests although it may act as the host plant for pests such as Harlequin Bugs (<i>Dindymus versicolor</i>) (P8). If pests are present, e.g. scale or mealybug, pruning may be sufficient to control them."
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"Pests - In California scale insects and aphids can be a serious problem with this plant. In Europe, when grown as a conservatory plant, or overwintered under glass, it can be seriously affected by greenhouse pests such as red spider mite."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	NIH U.S. National Library of Medicine. 2018. TOXNET Toxicology Data Network. https://toxnet.nlm.nih.gov/ . [Accessed 3 May 2018]	No evidence
	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

408	Creates a fire hazard in natural ecosystems	
	Source(s)	Notes
	Baker, K. S. (2006). Seed germination and dormancy in south-western Australian fire ephemerals and burial as a factor influencing seed responsiveness to smoke. PhD Dissertation. The University of Western Australia, Crawley WA	[Killed by fires. Regenerates from seeds. Contribution to fuel load or increased fire risk unknown] " <i>Alyogyne hakeifolia</i> and <i>A. huegelii</i> plants regenerate from seeds after fire and die within six or seven years (Brown and Hopkins 1984; Pate et al. 1985)."

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes

Qsn #	Question	Answer
	Australian Plants online. 2002. <i>Alyogyne</i> : An Update. http://anpsa.org.au/APOL28/dec02-1.html . [Accessed 3 May 2018]	"A well-drained sunny spot is ideal although plants will grow in semi-shade. Plants perform best when they receive sunlight for most of the day and have some wind protection as large plants are subject to wind damage."
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"It can be grown in full sun, or in partial shade. Protection from strong winds is desirable."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Australian Plants online. 2002. <i>Alyogyne</i> : An Update. http://anpsa.org.au/APOL28/dec02-1.html . [Accessed 3 May 2018]	"As <i>A. huegelii</i> (P7) comes from sandy to sandy-gravel areas, it is also intolerant of bad drainage however it is adaptable to a wide range of soil types."
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2016. Growing Native Plants. <i>Alyogyne huegelii</i> . https://www.anbg.gov.au/gnp/gnp6/aly-hueg.html . [Accessed 3 May 2018]	"It is found naturally in sandy to sandy-gravel areas of South Australia and Western Australia and although adaptable to a wide range of soil types, it is intolerant of bad drainage."
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"The plant is a fast-growing, open, spreading shrub, typically reaching 1m or more in height and spread, but can reach twice this size, found in sandy and sandy-gravel soils in South Australia and Western Australia." ... "It requires a well drained soil, but can be grown in sand, loam or clay soils."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G. & Lewington, M. 2002. <i>Flora of the South West: Dicotyledons</i> . UWA Publishing, Crawley, Western Australia	"Shrub to 3 m. slender. erect. clonal in habit. sparsely to densely hairy with hairs branched and star-like. Leaves stalked, deeply 5-lobed, 30-80 mm long and 20-90 mm wide, the lobes often irregularly toothed, sparsely hairy."

412	Forms dense thickets	
	Source(s)	Notes
	Western Australian Herbarium (1998–2018). <i>FloraBase—the Western Australian Flora</i> . Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 May 2018]	"Distribution Botanical Province Eremaean or South-West, IBRA Bioregion Yalgoo, Geraldton Sandplains, Swan Coastal Plain, Avon Wheatbelt, Jarrah Forest or Esperance." [Unknown. No evidence found]

501	Aquatic	n
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G. & Lewington, M. 2002. <i>Flora of the South West: Dicotyledons</i> . UWA Publishing, Crawley, Western Australia	[Terrestrial shrub] "Heath or shrubland, usually on sandy soils. Recorded from the Leeuwin - Naturaliste National Park; extends north to Shark Bay and eastwards to east of Esperance; also in SA."

502	Grass	n
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Qsn #	Question	Answer
	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 3 May 2018]	Family: Malvaceae Subfamily: Malvoideae Tribe: Gossypieae
503	Nitrogen fixing woody plant	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 3 May 2018]	Family: Malvaceae Subfamily: Malvoideae Tribe: Gossypieae
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wheeler, J.R., Marchant, N.G. & Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Shrub to 3 m, slender, erect, clonal in habit. sparsely to densely hairy with hairs branched and star-like."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2018). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 May 2018]	" <i>Alyogyne huegelii</i> (Endl.) Fryxell Lilac Hibiscus" ... "Conservation Code: Not threatened"
602	Produces viable seed	y
	Source(s)	Notes
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	" <i>Alyogyne huegelii</i> can be grown from seed, which remains viable for a number years. Germination is assisted by scarification, i.e. by rubbing the seed against sandpaper or the equivalent to break through the hard protective coating and allow moisture to penetrate. Seed shown be sown in spring or early autumn, depending on the climate (to avoid exposing young plants to cold winters, or wet summers)."

Qsn #	Question	Answer
	<p>Baker, K. S., Steadman, K. J., Plummer, J. A., & Dixon, K. W. (2005). Seed dormancy and germination responses of nine Australian fire ephemerals. <i>Plant and Soil</i>, 277(1-2): 345–358</p>	<p>"Fire ephemerals are short-lived plants with seeds that persist in the soil and germinate after a fire or physical soil disturbance. Ex situ germination of many Australian fire ephemerals has previously been difficult. Dormancy was present in most of the nine fire ephemerals examined. <i>Alyogyne hakeifolia</i> (Giord.) Alef. and <i>Alyogyne huegelii</i> (Endl.) Fryxell (Malvaceae) seeds had physical and possibly also physiological dormancy, <i>Actinotus leucocephalus</i> Benth. (Apiaceae) seeds had morphophysiological dormancy, <i>Austrostipa compressa</i> (R.Br.) S.W.L. Jacobs & J. Everett and <i>Austrostipa macalpinei</i> (Reader) S.W.L. Jacobs & J. Everett (Poaceae) seeds were either non-dormant or possessed physiological dormancy, and seeds of all remaining species possessed physiological dormancy. A proportion of the <i>Alyogyne hakeifolia</i>, <i>Alyogyne huegelii</i>, <i>Austrostipa compressa</i> and <i>Austrostipa macalpinei</i> seed populations were non dormant because some seeds could germinate at the various incubation temperatures without further treatment. At 20 °C, artificial methods of inducing germination such as manual or acid scarification were among the optimal treatments for <i>Austrostipa compressa</i>, <i>Austrostipa macalpinei</i>, <i>Alyogyne huegelii</i>, <i>Actinotus leucocephalus</i> and <i>Grevillea scapigera</i> A.S. George (Proteaceae), and gibberellic acid induced maximum germination of <i>Tersonia cyathiflora</i> (Fenzl) J.W. Green (Gyrostemonaceae) seeds. Heat (70 °C for 1 h) and smoke water was one of the most effective treatments for germinating <i>Actinotus leucocephalus</i> and <i>Codonocarpus cotinifolius</i> (Desf.) F. Muell. (Gyrostemonaceae) seeds. Germination of <i>Grevillea scapigera</i>, <i>Codonocarpus cotinifolius</i>, <i>Gyrostemon racemiger</i> H. Walter (Gyrostemonaceae) and <i>Tersonia cyathiflora</i> did not exceed 40% and may require other treatments to overcome dormancy. Although the nine fire ephemerals examined require fire to germinate under natural conditions, a range of germination responses and dormancy types was observed."</p>

603	Hybridizes naturally	
	Source(s)	Notes
	<p>Hutchins, G. (2013). <i>Alyogyne</i> plant named 'HUTWOW'. U.S. Patent Application No. 13/135,211. Washington, DC: U.S. Patent and Trademark Office</p>	<p>[Artificial hybrids possible] "The Inventor made a cross in 2004 between unnamed plants from his breeding program of <i>Alyogyne huegelii</i> and <i>Alyogyne hakeifolia</i> at his nursery in Hornchurch, Essex, United Kingdom. The new cultivar was selected in 2005 and grown further for trials."</p>

Qsn #	Question	Answer
604	Self-compatible or apomictic	
	Source(s)	Notes
	Western Australian Herbarium (1998–2018). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 May 2018]	[Unknown. Potentially possible. Flowers perfect] "Calyx green, 20-25 mm long, the lobes fused less than half their length, stellate hairs present. Corolla white, red, blue, purple or cream, 50-75 mm long, hairs or scales present, stellate hairs present. Stamens many, united and arising from a staminal tube around the style; filaments present, 3-5 mm long; anthers 1.2-1.5 mm long. Staminodes absent. Ovary hairs and scales absent (ovary quite glabrous); style 1, 30-35 mm long, with five style branches or lobes, mostly glabrous. "

605	Requires specialist pollinators	n
	Source(s)	Notes
	T-Y Nursery. 2015. Wholesale Nursery News. February 5, 2015. Plant for the Pollinators. https://www.tynursery.com . [Accessed 3 May 2018]	"Alyogyne huegelii, also commonly referred to as Blue Hibiscus, is an excellent pollinator plant: The bees love it. This evergreen shrub blooms continuously throughout the growing season, providing a steady flow of nectar and pollen for different species of bees and butterflies."
	Western Australian Herbarium (1998–2018). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 May 2018]	[Genus description] "Reproductive type, pollination. Fertile flowers hermaphrodite. Unisexual flowers absent. Plants hermaphrodite. Entomophilous."

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"Alyogyne huegelii can also be readily propagated by cuttings. 4" semi-ripe cuttings are recommended, but soft cuttings can also be successful. Cuttings taken in spring generally establish well but cuttings can be taken in early autumn if summers are very wet and winters are not too severe."
	Australian Native Plants Society. 2007. Alyogyne huegelii. http://anpsa.org.au/a-hue.html . [Accessed 3 May 2018]	"Propagation from seed is relatively easy and no special pretreatment is needed. Cuttings also strike readily."

607	Minimum generative time (years)	
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"The plant is a fast-growing, open, spreading shrub, typically reaching 1m or more in height and spread," [Unspecified, but probably flowers between 1-2 years of age at the earliest]

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

Qsn #	Question	Answer
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	"Alyogyne - Perennial shrubs that are closely related to Hibiscus. Seeds are black or brown and are collected as they fall from the schizocarp (fruits) in summer, after flowering. Similar to Abutilon and other Malvaceae." [General Description. No means of external attachment]
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.htm . [Accessed 3 May 2018]	"The fruit is a dehiscent 5-celled capsule. The seeds are often woolly." [No means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.htm . [Accessed 3 May 2018]	"Alyogyne huegelii is in cultivation, primarily in Australia and the SW USA, but also in Europe, where it is grown as a conservatory plant."
	De Judicibus, M. (2011). Botanical Notebook. University of Melbourne Custom Book Centre, Melbourne	"It flowers prolifically from late spring through the end of summer making it popular in ornamental cultivation."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.htm . [Accessed 3 May 2018]	"The fruit is a dehiscent 5-celled capsule. The seeds are often woolly." [No evidence. Grown as an ornamental not alongside produce]

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	"Alyogyne - Perennial shrubs that are closely related to Hibiscus. Seeds are black or brown and are collected as they fall from the schizocarp (fruits) in summer, after flowering. Similar to Abutilon and other Malvaceae." [General description. No evidence of wind dispersal]

705	Propagules water dispersed	
	Source(s)	Notes
	Corrick, M.G. & Fuhrer, B. (2009). Wildflowers of Southern Western Australia. Third Edition. Rosenberg Publishing, Kenthurst, Australia	"Habitat: sandy, rocky soil in woodland, common along creek banks" [distribution suggests seeds may be buoyant and water dispersed]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	"Alyogyne - Perennial shrubs that are closely related to Hibiscus. Seeds are black or brown and are collected as they fall from the schizocarp (fruits) in summer, after flowering. Similar to Abutilon and other Malvaceae." [General description. No evidence of bird dispersal]

Qsn #	Question	Answer
707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	"Alyogyne - Perennial shrubs that are closely related to Hibiscus. Seeds are black or brown and are collected as they fall from the schizocarp (fruits) in summer, after flowering. Similar to Abutilon and other Malvaceae." [General description. No means of external attachment]
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"The fruit is a dehiscent 5-celled capsule. The seeds are often woolly." [No evidence. Not fleshy-fruited]

708	Propagules survive passage through the gut	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Browsed by deer. Unknown if seeds are intentionally or incidentally ingested or if they survive gut passage

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"The fruit is a 5-celled dehiscent capsule. The seeds are often woolly." [Seed densities unspecified]
	Baker, K. S. (2006). Seed germination and dormancy in south-western Australian fire ephemerals and burial as a factor influencing seed responsiveness to smoke. PhD Dissertation. The University of Western Australia, Crawley WA	"U. Bell (1999) suggests that <i>A. compressa</i> can form a persistent seedbank as over 100 viable seeds per metre squared were recorded at Yule Brook Reserve, Perth, over 45 years after a fire (Smith et al. 1999)." [Probably no. Related species reaches densities of only 100 per m2]

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Baker, K. S. (2006). Seed germination and dormancy in south-western Australian fire ephemerals and burial as a factor influencing seed responsiveness to smoke. PhD Dissertation. The University of Western Australia, Crawley WA	"Alyogyne hakeifolia and <i>A. huegelii</i> plants regenerate from seeds after fire and die within six or seven years (Brown and Hopkins 1984; Pate et al. 1985). These seeds are thought to persist in the soil seedbank for decades between fires because these conspicuous species are not observed except in the immediate post-fire years (Weston 1985). Elliot and Jones (1982) and Keena (2002) have noted that Alyogyne seeds retain their viability for a number of years."
	Hinsley, S.R. 2004. The Alyogyne Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	"Alyogyne huegelii can be grown from seed, which remains viable for a number years. Germination is assisted by scarification, i.e. by rubbing the seed against sandpaper or the equivalent to break through the hard protective coating and allow moisture to penetrate."

Qsn #	Question	Answer
	Baker, K. S., Steadman, K. J., Plummer, J. A., & Dixon, K. W. (2005). Seed dormancy and germination responses of nine Australian fire ephemerals. <i>Plant and Soil</i> , 277(1-2): 345–358	"Fire ephemerals are short-lived plants with seeds that persist in the soil and germinate after a fire or physical soil disturbance." ... "Dormancy was present in most of the nine fire ephemerals examined. <i>Alyogyne hakeifolia</i> (Giord.) Alef. and <i>Alyogyne huegelii</i> (Endl.) Fryxell (Malvaceae) seeds had physical and possibly also physiological dormancy..." ... "A proportion of the <i>Alyogyne hakeifolia</i> , <i>Alyogyne huegelii</i> , <i>Austrostipa compressa</i> and <i>Austrostipa macalpinei</i> seed populations were non dormant because some seeds could germinate at the various incubation temperatures without further treatment."

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2018. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Australian Plants online. 2002. <i>Alyogyne</i> : An Update. http://anpsa.org.au/APOL28/dec02-1.html . [Accessed 3 May 2018]	"This species has the desirable ability to throw out vigorous, fast-growing shoots from old wood, thus enabling it to be kept down to a small compact shrub if desired. Heavy pruning can maintain its size in relation to other plants. Luen Miller from Monterey Bay Nursery in California (W3) reports that plants that were browsed by deer in drought conditions developed into dense, thick, dome-shaped plants about 1.5 m (5') tall and 2.4 m (8') across and were completely covered with purple flowers."
	Hinsley, S.R. 2004. The <i>Alyogyne</i> Page. http://www.malvaceae.info/Genera/Alyogyne/Alyogyne.html . [Accessed 3 May 2018]	[Tolerates hard pruning] "If unpruned <i>Alyogyne huegelii</i> becomes a little sparse of foliage on lower branches, and may also become straggly. It can be pruned back quite hard after flowering, or frequently and lightly during the flowering season. Pruning results in a denser, more compact, and possibly more floriferous plant. It will throw out vigorous fast-growing shoots from old wood, thus enabling it to be kept down to a small compact shrub if desired."

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

- Able to grow in tropical climates
- Tolerates many soil types
- Reproduces by seeds
- Seeds dispersed by gravity & intentionally by people
- Seeds form a persistent seed bank
- Able to resprout after cutting & hard pruning

Low Risk Traits

- No reports of invasiveness or naturalization (widely cultivated)
- Unarmed (no spines, thorns, or burrs)
- Provides fodder for livestock (although some sources report it to be deer-resistant)
- Non-toxic
- Ornamental
- Prefers high light environments (tolerates partial shade)