

<b>Taxon:</b> <i>Kunzea affinis</i> S.Moore	<b>Family:</b> Myrtaceae
<b>Common Name(s):</b> mountainbush small-leaved <i>Kunzea</i>	<b>Synonym(s):</b> NA

<b>Assessor:</b> Chuck Chimera	<b>Status:</b> Assessor Approved	<b>End Date:</b> 14 Jul 2020
<b>WRA Score:</b> 0.0	<b>Designation:</b> L	<b>Rating:</b> Low Risk

**Keywords:** Shrub, Unarmed, Non-toxic, Ornamental, Wind-Dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	Intermediate
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	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	?
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
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	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
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		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	y
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/m <sup>2</sup> )		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides	y=-1, n=1	y
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
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	[Not domesticate] "Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers. Found from east of the Stirling Range, with localities becoming fewer and far between east of Ravensthorpe. Recorded as far north as Lake King and as far south as Cape Riche."
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
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers. Found from east of the Stirling Range, with localities becoming fewer and far between east of Ravensthorpe. Recorded as far north as Lake King and as far south as Cape Riche."
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"It is best suited to Mediterranean climates (dry summer - wet winter) and is often short-lived in more humid climates."
202	Quality of climate match data	High
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Aussie Green Thumb. (2020). Plant of the Month – <i>Kunzea affinis</i> . <a href="https://aussiegreenthumb.com/kunzea-affinis/">https://aussiegreenthumb.com/kunzea-affinis/</a> . [Accessed 13 Jul 2020]	"The <i>Kunzea affinis</i> is native to the south of Western Australia and as such prefers a temperate to cool climate."

Qsn #	Question	Answer
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"This species has been in cultivation for many years. It is best suited to Mediterranean climates (dry summer - wet winter) and is often short-lived in more humid climates. It requires excellent drainage and a sunny or lightly shaded position. It withstands at least moderate frost."

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Found from east of the Stirling Range, with localities becoming fewer and far between east of Ravensthorpe. Recorded as far north as Lake King and as far south as Cape Riche."
	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

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	San Marcos Growers. (2020). <i>Kunzea affinis</i> - Mountainbush. <a href="https://www.smgrowers.com">https://www.smgrowers.com</a> . [Accessed 13 Jul 2020]	" <i>Kunzea affinis</i> (Mountainbush) - This is an open evergreen shrub that grows to 6 feet tall and spreads to 10 feet with bright green needle-like leaves that give the plant a somewhat wispy appearance. The small pink flowers are held en masse and the plant blooms profusely from mid winter into spring. Unlike other <i>Kunzea</i> we have grown this plant puts on a great floral show in a nursery containers and would probably be suitable to prolonged use as a container specimen. It does best in the full sun in well-drained soils with little to occasional summer irrigation. This Western Australian species is tolerant of a wide range of soils and light to moderate frosts (hardy to down to about 25° degrees F). Monterey Bay Nursery notes that it was killed at 20° F in the UC Santa Cruz Arboretum. Useful as an informal hedge when tipped pruned after flowering. It also makes a good cut flower with vase life up to 1 week without treatment. We grew this plant from 1993 until 2004."
	Dave's Garden. (2020). <i>Kunzea</i> Species, Small-Leaved <i>Kunzea</i> - <i>Kunzea affinis</i> . <a href="https://davesgarden.com/guides/pf/go/138698/">https://davesgarden.com/guides/pf/go/138698/</a> . [Accessed 13 Jul 2020]	"This plant is said to grow outdoors in the following regions: San Leandro, California"
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"This species has been in cultivation for many years. It is best suited to Mediterranean climates (dry summer - wet winter) and is often short-lived in more humid climates."
	WRA Specialist. (2020). Personal Communication	Cultivated in the Unites States, but extent of cultivation unclear

301	Naturalized beyond native range	n
	Source(s)	Notes

Qsn #	Question	Answer
	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

305	Congeneric weed	y
	Source(s)	Notes
	Global Invasive Species Database. (2020). Species profile: <i>Kunzea ericoides</i> . <a href="http://www.iucngisd.org/gisd/">http://www.iucngisd.org/gisd/</a> . [Accessed 14 Jul 2020]	" <i>Kunzea ericoides</i> is a shrub or small tree that can reach heights up to 6metres. It prefers to invade abandoned pasture and native forests in the Australasia-Pacific regions. It can also be classified as a rare species in coastland where it is infrequently found on coastal shrubland. This species easily invades any habitat containing open forest complexes and proceeds to out compete other young trees and shrubs, shading out ground-layer plants. Natural fire regimes and heavy grazing historically kept this species under control, but with the reduction in both of these, this species has flourished."

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	[No evidence] "Shrubs 0.6-1 .5 (-2.5) m high, with few erect stems each surrounded by an intricate branching system of short branches; young branches with flanges scarcely raised, more or less densely covered with usually appressed forward-directed hairs, becoming glabrous; early bark fibrous-mosaic, scarcely fluted, peeling in long, usually narrow strips. Leaves: petiole 0.6-0.8 mm long, appressed; lamina linear, 3.5-6 (-8) x 0.4-0.8 (-1 . 1 ) mm, rounded or rarely with acute apex when young, usually grooved above, strongly convex below, erect to more or less appressed when young, with scattered long forward-directed hairs mainly along the margin."

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

403	Parasitic	n
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Shrubs 0.6-1 .5 (-2.5) m high, with few erect stems each surrounded by an intricate branching system of short branches" [No evidence. [Myrtaceae. No evidence]

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

405	Toxic to animals	n
	Source(s)	Notes
	Quattrocchi, U. 2012. <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. <i>International poisonous plants checklist: an evidence-based reference</i> . CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes

Qsn #	Question	Answer
	Old, K. M., Wingfield, M. J., & Yuan, Z. Q. (2003). A Manual of Diseases of Eucalyptus in South-East Asia. Center for International Forestry Research, Jakarta	"All genera within the family Myrtaceae are potentially susceptible to this rust, but information on the host range is incomplete. In addition to Eucalyptus, 9 genera and more than 30 species of Myrtaceae are recorded hosts of <i>P. psidii</i> (Laundon and Waterston 1965, Burnett and Schubert 1985, Ferreira 1989, Coutinho et al. 1998). Recent unpublished research by Zauza et al. has revealed further hosts of <i>P. psidii</i> and has identified resistant species within most genera. Susceptible genera include several which are well represented in Australian native vegetation, e.g. Angophora, Callistemon, Corymbia, Eucalyptus, Kunzea, Melaleuca, Syzygium and Syncarpia."
	WRA Specialist. (2020). Personal Communication	Unknown if <i>Kunzea affinis</i> could serve as an important host to the fungus <i>Austropuccinia psidii</i> , but this pathogen is already present in the Hawaiian Islands and has been documented on a fairly wide host range of native and non-native plants. The cultivation of <i>Kunzea affinis</i> is therefore unlikely to significantly affect the distribution of <i>Austropuccinia psidii</i> .

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	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
	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	n
	Source(s)	Notes
	Wyse, S. V., Perry, G. L., & Curran, T. J. (2018). Shoot-level flammability of species mixtures is driven by the most flammable species: implications for vegetation-fire feedbacks favouring invasive species. <i>Ecosystems</i> , 21(5), 886-900	[Unknown. Other species in genus reported to be highly flammable] "The flammability of New Zealand's native forests largely follows a hump-backed or declining relationship with forest age, peaking in early succession 50–100 years following forest disturbance as shrubland communities, which are typically dominated by flammable Myrtaceous species such as <i>Kunzea robusta</i> and <i>Leptospermum scoparium</i> (Perry and others 2014; Wyse and others 2016)."
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	Unknown. No information on fire ecology provided in this publication

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

Qsn #	Question	Answer
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2018). Growing Native Plants. <i>Kunzea affinis</i> . <a href="https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html">https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html</a> . [Accessed 14 Jul 2020]	"In cultivation these plants require good drainage in a sunny or semi-shaded position and will benefit from heavy mulching with leaf litter or wood shavings. "
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"It requires excellent drainage and a sunny or lightly shaded position."
	Dave's Garden. (2020). <i>Kunzea</i> Species, Small-Leaved <i>Kunzea</i> - <i>Kunzea affinis</i> . <a href="https://davesgarden.com/guides/pf/go/138698/">https://davesgarden.com/guides/pf/go/138698/</a> . [Accessed 14 Jul 2020]	"Sun Exposure: Full Sun"
	WRA Specialist. (2020). Personal Communication	Grows in full sun to semi-shade. Dense shade might inhibit ability to establish or spread under intact forest

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Aerulean. (2020). <i>Kunzea affinis</i> . <a href="https://aerulean.com/plants/2412">https://aerulean.com/plants/2412</a> . [Accessed 13 Jul 2020]	"Soil type: wide range"
	San Marcos Growers. (2020). <i>Kunzea affinis</i> - Mountainbush. <a href="https://www.smgrowers.com">https://www.smgrowers.com</a> . [Accessed 13 Jul 2020]	"This Western Australian species is tolerant of a wide range of soils and light to moderate frosts (hardy to down to about 25° degrees F)."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Shrubs 0.6-1 .5 (-2.5) m high, with few erect stems each surrounded by an intricate branching system of short branches"

412	Forms dense thickets	n
	Source(s)	Notes
	Western Australian Herbarium (1998–2020). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. <a href="https://florabase.dpaw.wa.gov.au/">https://florabase.dpaw.wa.gov.au/</a> . [Accessed 14 Jul 2020]	"Erect shrub, 0.3-1.5(-2.5) m high. Fl. pink/red-purple, Aug to Oct. Sand or clay over granite, loam. Granite outcrops."
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	[No evidence] "Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers. Found from east of the Stirling Range, with localities becoming fewer and far between east of Ravensthorpe. Recorded as far north as Lake King and as far south as Cape Riche."



Qsn #	Question	Answer
501	<b>Aquatic</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	[Terrestrial] "Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers."
502	<b>Grass</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a> . [Accessed 14 Jul 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae
503	<b>Nitrogen fixing woody plant</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	USDA, Agricultural Research Service, National Plant Germplasm System. (2020). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="https://npgsweb.ars-grin.gov/">https://npgsweb.ars-grin.gov/</a> . [Accessed 14 Jul 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae
504	<b>Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Shrubs 0.6-1 .5 (-2.5) m high, with few erect stems each surrounded by an intricate branching system of short branches"
601	<b>Evidence of substantial reproductive failure in native habitat</b>	n
	<b>Source(s)</b>	<b>Notes</b>
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"Conservation Status: Not considered to be at risk in the wild."
602	<b>Produces viable seed</b>	y
	<b>Source(s)</b>	<b>Notes</b>
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"The five-petalled, pink flowers have prominent stamens and are similar in appearance to those of <i>Leptospermum</i> . They occur in spring and are followed by small 1-celled fruits which release numerous small seeds when ripe." ... "Propagation is easy from both seed and cuttings. If seed is being collected, the plants need to be kept under observation or the seed will be lost."

Qsn #	Question	Answer
603	Hybridizes naturally	
	Source(s)	Notes
	Toelken, H. R., & Craig, G. F. (2007). <i>Kunzea acicularis</i> , <i>K. strigosa</i> and <i>K. similis</i> subsp. <i>mediterranea</i> (Myrtaceae)—new taxa from near Ravensthorpe, Western Australia. <i>Nuytsia</i> , 17, 385-396	[Previous hybrid no longer considered valid] " <i>K. affinis</i> × <i>K. preissiana</i> (fide Toelken 1996: 100). No convincing evidence could be found to identify any of the existing specimens as this putative hybrid, however unlikely this would seem judging by the records of their presence between most species in <i>Kunzea</i> subsect. <i>Floridae</i> Toelken. Most of the specimens previously cited are now referred to <i>K. strigosa</i> , but also a few are transferred to <i>K. preissiana</i> (cf. discussion there)."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Page, T., Moore, G. M., Will, J., & Halloran, G. M. (2010). Breeding behaviour of <i>Kunzea pomifera</i> (Myrtaceae): self-incompatibility, intraspecific and interspecific cross-compatibility. <i>Sexual Plant Reproduction</i> , 23(3), 239-253	[Unknown. Related taxa may be self-incompatible, or self-compatible] "Observations of self-incompatibility in <i>K. pomifera</i> extend the evidence for the prevalence of self incompatibility in the family Myrtaceae (Beardsell et al. 1993b). Burrell (1965); however, that <i>Leptospermum scoparium</i> and <i>Kunzea ericoides</i> (syn. <i>Leptospermum ericoides</i> ) set viable seed in bagged flowers does indicate a degree of self-compatibility. de Lange et al. (2005) found self-compatibility was prevalent in the New Zealand <i>K. ericoides</i> complex."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Hypanthium 2-3 mm long when flowering (with free tube 1.3-1.5 mm long), glabrous. Calyx lobes broadly ovate, 1-1.3 mm long, bluntly acute to rounded, rarely acute, margins slightly incurved, a slight ridge above central vein, glabrous. Corolla lobes orbicular-spathulate, 2.4-2.8 (-3) mm long, scarcely clawed, pink to magenta. Stamens 20-25, in more than one whorl; filaments 2.4-3 mm long; anthers with a small terminal gland." [No obvious morphological features for specialized pollination]
	Keighery, G. J. (1982). Bird-pollinated plants in western Australia. In <i>Pollination and Evolution</i> (eds. J. A. Armstrong, J. M. Powell and A. J. Richards), pp. 77–89. Royal Botanic Garden, Sydney	"Table 6. Pollination syndromes: South Western Myrtaceae" [ <i>Kunzea</i> reported to be pollinated by beetles, flies, bees (several species), moths, and birds]

Qsn #	Question	Answer
606	<b>Reproduction by vegetative fragmentation</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2018). Growing Native Plants. <i>Kunzea affinis</i> . <a href="https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html">https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html</a> . [Accessed 14 Jul 2020]	"Propagation is best carried out from cuttings of soft new wood taken in spring or early summer and these strike readily in four to six weeks. Seed is also successful but the seed is difficult to collect"
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 14 Jul 2020]	"Propagation is easy from both seed and cuttings. If seed is being collected, the plants need to be kept under observation or the seed will be lost." [No evidence]
607	<b>Minimum generative time (years)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. (2020). Personal Communication	Unknown
701	<b>Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section Zeanuk. <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers. Found from east of the Stirling Range, with localities becoming fewer and far between east of Ravensthorpe." [Distribution does not suggest seeds are accidentally dispersed]
	Thorsen, M. J., Dickinson, K. J., & Seddon, P. J. (2009). Seed dispersal systems in the New Zealand flora. <i>Perspectives in Plant Ecology, Evolution and Systematics</i> , 11(4): 285-309	[Species in genus with putatively wind dispersed seeds] "Other species have small, round or elongate propagules (r2mm diameter), frequently with a ridged, reticulate or tuberculate testa, which are probably an adaption to wind dispersal (Ridley, 1930, Razi, 1950). Genera with these features include <i>Drosera</i> , and the ericaceous <i>Dracophyllum</i> , <i>Leptospermum</i> , <i>Kunzea</i> , and <i>Metrosideros</i> (Wardle, 1971; Haase, 1986; Webb and Simpson, 2001)."
702	<b>Propagules dispersed intentionally by people</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"This species has been in cultivation for many years. It is best suited to Mediterranean climates (dry summer - wet winter) and is often short-lived in more humid climates."
703	<b>Propagules likely to disperse as a produce contaminant</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. (2020). Personal Communication	No evidence found, but use in cut flower and foliage trade could possibly result in accidental dispersal of seeds as a "contaminant" of dried flower arrangements
704	<b>Propagules adapted to wind dispersal</b>	<b>y</b>

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Thorsen, M. J., Dickinson, K. J., & Seddon, P. J. (2009). Seed dispersal systems in the New Zealand flora. <i>Perspectives in Plant Ecology, Evolution and Systematics</i> , 11(4): 285-309	[Presumably wind dispersed, as are other species in the genus] "Other species have small, round or elongate propagules (r2mm diameter), frequently with a ridged, reticulate or tuberculate testa, which are probably an adaption to wind dispersal (Ridley, 1930, Razi, 1950). Genera with these features include <i>Drosera</i> , and the ericaceous <i>Dracophyllum</i> , <i>Leptospermum</i> , <i>Kunzea</i> , and <i>Metrosideros</i> (Wardle, 1971; Haase, 1986; Webb and Simpson, 2001)."
<b>705</b>	<b>Propagules water dispersed</b>	<b>y</b>
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	[Often found along rivers, suggesting water likely disperses seeds] "Growing in a wide range of habitats but usually on sandy soils and normally associated with scrub vegetation but also often found in clay soils in depressions or along rivers."
<b>706</b>	<b>Propagules bird dispersed</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Fruit an um-shaped capsule usually with 5 vertical ridges and erect slightly incurved calyx lobes." [Not fleshy fruited]
<b>707</b>	<b>Propagules dispersed by other animals (externally)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	WRA Specialist. (2020). Personal Communication	Unknown. Small seed size could potentially result in seed movement via attachment to fur, feet, soils etc. No direct evidence found
<b>708</b>	<b>Propagules survive passage through the gut</b>	<b>n</b>
	<b>Source(s)</b>	<b>Notes</b>
	Toelken, H. R. (1996). A revision of the genus <i>Kunzea</i> (Myrtaceae) I. the Western Australian section <i>Zeanuk</i> . <i>Journal of the Adelaide Botanic Garden</i> , 17: 29-106	"Fruit an um-shaped capsule usually with 5 vertical ridges and erect [slightly incurved calyx lobes." ]Not fleshy-fruited or adapted for consumption by animals. Unlikely to be internally dispersed]
<b>801</b>	<b>Prolific seed production (&gt;1000/m2)</b>	
	<b>Source(s)</b>	<b>Notes</b>
	Australian Native Plant Society. (2020). <i>Kunzea affinis</i> . <a href="http://anpsa.org.au/k-aff.html">http://anpsa.org.au/k-aff.html</a> . [Accessed 13 Jul 2020]	"The five-petalled, pink flowers have prominent stamens and are similar in appearance to those of <i>Leptospermum</i> . They occur in spring and are followed by small 1-celled fruits which release numerous small seeds when ripe."
<b>802</b>	<b>Evidence that a persistent propagule bank is formed (&gt;1 yr)</b>	

Qsn #	Question	Answer
	<b>Source(s)</b>	<b>Notes</b>
	Royal Botanic Gardens Kew. (2020) Seed Information Database (SID). Version 7.1. Available from: <a href="http://data.kew.org/sid/">http://data.kew.org/sid/</a> . [Accessed 14 Jul 2020]	Several species in genus with orthodox seeds. Longevity in soil under natural conditions unknown

803	Well controlled by herbicides	y
	<b>Source(s)</b>	<b>Notes</b>
	CABI. (2020). Invasive Species Compendium. Wallingford, UK: CAB International. <a href="http://www.cabi.org/isc">www.cabi.org/isc</a>	"K. ericoides can be controlled by broadcast application of herbicides by air, hand gun, mist blower, or backpack sprayer. Appropriate herbicides include metsulfuron methyl, and glyphosate" [No evidence was found that K. affinis has ever been controlled using herbicides, but methods to control the invasive congener, K. ericoides, would likely be effective if needed]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	<b>Source(s)</b>	<b>Notes</b>
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2018). Growing Native Plants. <i>Kunzea affinis</i> . <a href="https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html">https://www.anbg.gov.au/gnp/gnp13/kunzea-affinis.html</a> . [Accessed 14 Jul 2020]	"Light tip pruning throughout the plant's development will encourage bushiness."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	<b>Source(s)</b>	<b>Notes</b>
	Old, K. M., Wingfield, M. J., & Yuan, Z. Q. (2003). A Manual of Diseases of Eucalyptus in South-East Asia. Center for International Forestry Research, Jakarta	[Species of <i>Kunzea</i> may be susceptible to fungal pathogen <i>Austropuccinia psidii</i> ] "All genera within the family Myrtaceae are potentially susceptible to this rust, but information on the host range is incomplete. In addition to <i>Eucalyptus</i> , 9 genera and more than 30 species of Myrtaceae are recorded hosts of <i>P. psidii</i> (Laundon and Waterston 1965, Burnett and Schubert 1985, Ferreira 1989, Coutinho et al. 1998). Recent unpublished research by Zauza et al. has revealed further hosts of <i>P. psidii</i> and has identified resistant species within most genera. Susceptible genera include several which are well represented in Australian native vegetation, e.g. <i>Angophora</i> , <i>Callistemon</i> , <i>Corymbia</i> , <i>Eucalyptus</i> , <i>Kunzea</i> , <i>Melaleuca</i> , <i>Syzygium</i> and <i>Syncarpia</i> ."
	WRA Specialist. (2020). Personal Communication	Unknown. <i>Austropuccinia psidii</i> is present in the Hawaiian Islands, and may affect <i>Kunzea affinis</i> , as it does many genera in the family Myrtaceae

**Summary of Risk Traits:**

High Risk / Undesirable Traits

- Other species in genus are invasive
- Tolerates many soil types
- Reproduces by seeds
- Seeds dispersed by wind, probably water, and intentionally by people

Low Risk Traits

- No reports of invasiveness or naturalization, but limited evidence of introduction outside native range
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Not reported to spread vegetatively