Taxon: Kunzea ericifolia (Sm.) Heynh. **Family:** Myrtaceae

Common Name(s): condil, kitja boorn, poorndil, spearwood, yellow kunzea

Synonym(s): Kunzea ericifolia subsp. ericifolia, Kunzea propinqua Schauer, Kunzea vestita Schauer, Metrosideros ericifolia Sm., Stenospermum ericifolium (Sm.)

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 13 Aug 2020

WRA Score: 1.0 **Designation:** EVALUATE **Rating:** Evaluate

Keywords: Shrub, Unarmed, Non-toxic, Ornamental, Bradysporous

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		
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

Qsn #	Question	Answer Option	Answer
408	Creates a fire hazard in natural ecosystems		
409	Is a shade tolerant plant at some stage of its life cycle		
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	y
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)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
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)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)		
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	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**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	[No evidence of domestication] "subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … ""subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby."

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 Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … ""subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	

Qsn #	Question	Answer
203	**Broad climate suitability (environmental versatility)**	**n**
	Source(s)	**Notes**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 12 Aug 2020]	"It is particularly suited to Mediterranean climates (dry summer - wet winter) but will also grow in more humid climates. It requires good drainage and a sunny or lightly shaded position. It withstands at least moderate frost."
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … ""subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby."

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … ""subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby."
	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**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 12 Aug 2020]	"This species has been in cultivation for many years. It is particularly suited to Mediterranean climates (dry summer - wet winter) but will also grow in more humid climates. It requires good drainage and a sunny or lightly shaded position. It withstands at least moderate frost."
	WRA Specialist. (2020). Personal Communication	Cultivated in Australia, and sold in the Unites States, but extent of cultivation unclear

301	Naturalized beyond native range	
	Source(s)	**Notes**
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Denmark east along the south coast to Albany, with a single. possibly naturalised record from Walpole-Nornalup National Park; extends an to West Mt Barren."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence

Qsn #	Question	Answer
	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: Kunzea ericoides. http://www.iucngisd.org/gisd/. [Accessed 12 Aug 2020]	"Kunzea ericoides 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 Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	[No evidence] "Shrubs up to 3 m tall, with one to few erect stems and lateral branches ascending to spreading; young branches with flanges more or less raised, villous with usually only long hairs, rarely with long and short ones, hairs usually straight and spreading but becoming somewhat appressed with age; early bark fibrous-mosaic becoming elongate-mosaic and slightly corky but usually flaking. Leaves: petiole 0.5-l .5 mm long and appressed; lamina linear-lanceolate to linear-elliptic, (28-) 34-63 (-82) x (0.5-) 0.6-1 mm, with pointed pale apex, gradually though slightly constricted into the petiole, flat to somewhat concave above, flat to slightly but rarely strongly convex below, with pointed pale apex, with central vein rarely visible at the base, spreading and strongly recurved when old, rarely erect, more or less covered with long spreading hairs rarely becoming glabrous."

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 Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"Shrubs up to 3 m tall, with one to few erect stems and lateral branches ascending to spreading" [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. 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

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 P. psidii (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 P. psidii 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."
	Ridley, G.S., Bain, J., Bulman, L.S., Dick, M.A. & Kay, M.K. (2000). Threats to New Zealands indigenous forests from exotic pathogens and pests. Science for Conservation 142. Department of Conservation, Wellington, New Zealand	[Possible host of a novel rust] "In 1994 a new rust was found on Kunzea ericifolia in Western Australia (Shivas & Walker 1994), giving a total of 2 myrtaceous rusts from Australia and 2 from India." … "Similarly the rust Puccinia cygnorum on Kunzea ericifolia was unknown in its native range until a consignment of K. ericifolia was rejected by New Zealand Quarantine Service (Shivas & Walker 1994)."
	WRA Specialist. (2020). Personal Communication	Unknown if Kunzea ericifolia could serve as an important host to the fungus Austropuccinia psidii, 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 Kunzea ericifolia is therefore unlikely to significantly affect the distribution of Austropuccinia psidii.

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	
	Source(s)	**Notes**
	Bell, D., Plummer, J., & Taylor, S. (1993). Seed Germination Ecology in Southwestern Western Australia. Botanical Review, 59(1), 24-73	"Nearly two-thirds of the species of plant communities in southwestern Western Australian plant communities survive severe fires by resprouting from protected buds under bark of above-ground organs, from buds of underground basal lignotubers, or from other underground perennating tissue" … "Appendix I" [Kunzea ericifolia - Fire response syndrome = Resprouter]
	WRA Specialist. (2020). Personal Communication	Identified as a resprouter, and adapted to fire-prone ecosystems. Contribution to fuel load or fire regime unknown.

409	Is a shade tolerant plant at some stage of its life cycle	

Qsn #	Question	Answer
	Source(s)	**Notes**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 13 Aug 2020]	"It requires good drainage and a sunny or lightly shaded position."
	Australian Seed. (2020). Kunzea ericifolia. https://www.australianseed.com/shop/item/kunzea-ericifloia. [Accessed 13 Aug 2020]	"Prefers a light to medium well-drained soil in an open sunny position, drought and frost resistant."
	Ole Lantana's Seed Store. (2020). Kunzea ericifolia. https://www.olelantanaseeds.com.au. [Accessed 13 Aug 2020]	"Sunlight: Full Sun"

410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y**
	Source(s)	**Notes**
	Ole Lantana's Seed Store. (2020). Kunzea ericifolia. https://www.olelantanaseeds.com.au. [Accessed 13 Aug 2020]	"An adaptable and almost pest free genus, it is suited to full sun positions on a wide range of well drained soils and is often found in seasonally wet swamps. " … "Soil pH: Neutral Soil Type: Clay, Loam, Peat, Sand"
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Sandy or lateritic soil"

411	**Climbing or smothering growth habit**	**n**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"Shrubs up to 3 m tall, with one to few erect stems and lateral branches ascending to spreading"

412	**Forms dense thickets**	**y**
	Source(s)	**Notes**
	Powell, R. (1990). Leaf and Branch: Trees and Tall Shrubs of Perth. Department of Conservation and Land Management, Perth, Western Australia	"The species can form dense thickets and produces large amounts of leaf litter, an environment occupied by a diverse range of orchid species that includes two rare hammer orchids. The stands also provide shelter to fauna, the New Holland honeyeater builds its nests amongst the branches.["
	Lisson, J. (2007), Rocky Gully catchment appraisal. Report 279. Department of Agriculture and Food, Perth, Western Australia	[A component of thicket vegetation] "The Tambellup system, along the Gordon River, is mostly flat-topped yate and wandoo, with sparse understorey of sedges. The small section of the Kent system comprises shallow leached sands over laterite supporting mostly thickets or heath of Beaufortia sparsa and Kunzea ericifolia."
	Toelken, H. R. (2016). Revision of Kunzea (Myrtaceae). 2. Subgenera Angasomyrtus and Salisia (section Salisia) from Western Australia and subgenera Kunzea and Niviferae (sections Platyphyllae and Pallidiflorae) from eastern Australia. Journal of the Adelaide Botanic Gardens, 29: 71-145	[Kunzea muelleri - Synonym -Kunzea ericifolia F.Muell.] "Forming often stands in boggy or seepage areas or associated with rock screes"

Qsn #	Question	Answer
501	**Aquatic**	**n**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	[Terrestrial shrub] "subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … "subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby."

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 12 Aug 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae

503	**Nitrogen fixing woody plant**	**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 12 Aug 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae

504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**n**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"Shrubs up to 3 m tall, with one to few erect stems and lateral branches ascending to spreading"

601	**Evidence of substantial reproductive failure in native habitat**	**n**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	[No evidence] "subsp. ericifolia … Conservation status Locally common" … "subsp. subulata … Conservation status Very localised but several populations conserved in Fitzgerald River National Park."

602	**Produces viable seed**	**y**
	Source(s)	**Notes**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 12 Aug 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."

Qsn #	Question	Answer
	Turner, S. R., Pearce, B., Rokich, D. P., Dunn, R. R., Merritt, D. J., Majer, J. D., & Dixon, K. W. (2006). Influence of polymer seed coatings, soil raking, and time of sowing on seedling performance in post-mining restoration. Restoration Ecology, 14(2), 267-277	"Table 1. Eleven Banksia woodland species used in this study, showing the family, seed syndrome, life form, seed dormancy classification, and the method used for overcoming seed dormancy" [Kunzea ericifolia - Seed Syndrome = Bradysporous; Seed Dormancy Type (If Applicable) = Nondormant; Seed Pre-Treatment (If Applicable) = Not required]
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	Kunzea ericifolia M Mean time to germinate = 18 days Q Quickest time to germinate = 11 days L Longest time to germinate = 23 days T Times sown = 7 days

603	Hybridizes naturally	
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	[Possibly Yes] "Putative hybrids 4a(i) K. clavata x K. ericifolia subsp. ericifo/ia see 6(i) K. clavata. 4a(ii) K. ericifo/ia subsp. ericijolia x K recurva. The folded leaves with usually acute apex as well as the bracts which are acute or bluntly acute and hairy over much of the surface show its resemblance to K. ericifo/ia subsp. ericifo/ia. However, the broad leaves, pink petals and long hairs (short in K. ericifo/ia) on bracts on floral axis relate to K. recurva, the only pink-flowered species recorded from King George Sound. The calyx lobes have sometimes in bud the typical recurved margins of C. recurva but at the flowering stage the margins are scarcely incurved and are similar to those of K. ericifo/ia, the only other species common in that area."

604	Self-compatible or apomictic	
	Source(s)	**Notes**
	Page, T., Moore, G. M., Will, J., & Halloran, G. M. (2010). Breeding behaviour of Kunzea pomifera (Myrtaceae): self-incompatibility, intraspecific and interspecific cross-compatibility. Sexual Plant Reproduction, 23(3), 239-253	[Unknown. Related taxa may be self-incompatible, or self-compatible] "Observations of self-incompatibility in K. pomifera extend the evidence for the prevalence of self incompatibility in the family Myrtaceae (Beardsell et al. 1993b). Burrell (1965); however, that Leptospermum scoparium and Kunzea ericoides (syn. Leptospermum ericoides) 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 K. ericoides complex."

Qsn #	Question	Answer
605	**Requires specialist pollinators**	**n**
	Source(s)	**Notes**
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Flowers yellow; bract ovate lo spoon-shaped, 4-5 mm long, hairy, pointed to beaked; floral bracts linear to very narrowly elliptic, 3-4 mm long, hairy, pointed; sepals 1.5-2 mm long, pointed; petals 1.5-2.5 mm long." [Flowers not specialized]
	Keighery, G. J. (1982). Bird-pollinated plants in western Australia. In Pollination and Evolution (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" [Kunzea reported to be pollinated by beetles, flies, bees (several species), moths, and birds]

606	**Reproduction by vegetative fragmentation**	**n**
	Source(s)	**Notes**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 13 Aug 2020]	"Propagation is easy from both seed and cuttings." [No evidence]
	Toelken, H. R. (2016). Revision of Kunzea (Myrtaceae). 2. Subgenera Angasomyrtus and Salisia (section Salisia) from Western Australia and subgenera Kunzea and Niviferae (sections Platyphyllae and Pallidiflorae) from eastern Australia. Journal of the Adelaide Botanic Gardens, 29: 71-145	[Kunzea ericifolia not identified as a suckering species] "Although occasionally recorded, little is known about suckering in many species, such as K. pomifera or K. micrantha, and a subsequent production of lignotubers has been recorded for K. micrantha subsp. petiolata (G. Cockerton, pers. comm.). Suckering is, for instance, thought to be important for maintaining the population of the rare K. rupestris. This phenomenon is also common in species of the K. ericoides complex, where some species even produce repeated lignotubers on often extensive underground rhizomes from which they will sucker (de Lange et al. 2010, p. 316). Such plants will freely regenerate when the aerial parts have been removed for road works."

607	**Minimum generative time (years)**	**>3**
	Source(s)	**Notes**
	Threatened Species Scientific Committee. (2017). Approved Conservation Advice for Kunzea ericifolia subsp. subulata. Department of the Environment, Canberra, AU	"Populations appear to be even-aged in relation to time since fire. Part of the West Mt Barren population was burnt in 2008 with resulting seedlings still non-reproductive in spring 2013 suggesting a juvenile period of at least 5-6 years."

701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**n**
	Source(s)	**Notes**
	Turner, S. R., Pearce, B., Rokich, D. P., Dunn, R. R., Merritt, D. J., Majer, J. D., & Dixon, K. W. (2006). Influence of polymer seed coatings, soil raking, and time of sowing on seedling performance in post-mining restoration. Restoration Ecology, 14(2), 267-277	[Unlikely. Small seeds could potentially be dispersed accidentally, but seeds are canopy stored (bradysporous) and only released following fire or other major disturbances] "Table 1. Eleven Banksia woodland species used in this study, showing the family, seed syndrome, life form, seed dormancy classification, and the method used for overcoming seed dormancy" [Kunzea ericifolia - Seed Syndrome = Bradysporous]

702	**Propagules dispersed intentionally by people**	**y**

Qsn #	Question	Answer
	Source(s)	**Notes**
	Australian Native Plant Society. (2020). Kunzea ericifolia. http://anpsa.org.au/k-eri.html. [Accessed 12 Aug 2020]	"This species has been in cultivation for many years. It is particularly suited to Mediterranean climates (dry summer - wet winter) but will also grow in more humid climates. It requires good drainage and a sunny or lightly shaded position. It withstands at least moderate frost."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	**Notes**
	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	Propagules adapted to wind dispersal	y
	Source(s)	**Notes**
	Thorsen, M. J., Dickinson, K. J., & Seddon, P. J. (2009). Seed dispersal systems in the New Zealand flora. Perspectives in Plant Ecology, Evolution and Systematics, 11(4): 285-309	[Presumably wind dispersed, as are other species in the genus] "Other species have small, round or elongate propagules (2mm 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 Drosera, and the ericaceous Dracophyllum, Leptospermum, Kunzea, and Metrosideros (Wardle, 1971; Haase, 1986; Webb and Simpson, 2001)."

705	Propagules water dispersed	y
	Source(s)	**Notes**
	Wheeler, J.R., Marchant, N.G.& Lewington, M. 2002. Flora of the South West: Dicotyledons. UWA Publishing, Crawley, Western Australia	"Sandy or lateritic soil, mostly in forest or woodland, often near swamps or fringing watercourses."
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"subsp. ericifolia … Known mainly from the area between Denmark, Mt Barker and just east of Albany where it grows usually in and around swamps or on the banks of creeks or rivers." … "subsp. subulata … Known only from the vicinity of West Mt Barren where plants grow among rocks towards the summit but it has also been recorded from lakes nearby." [subsp. ericifolia fften found along rivers, suggesting water likely disperses seeds]
	WRA Specialist. (2020). Personal Communication	Seeds are canopy stored (bradysporous), but based on distribution near waterways, are lilkely moved by water upon release from dry capsules

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"Fruit an um-shaped capsule with locules more or less bulging and calyx lobes erect." [No evidence. Not fleshy-fruited]

Qsn #	Question	Answer
707	**Propagules dispersed by other animals (externally)**	**n**
	Source(s)	**Notes**
	Turner, S. R., Pearce, B., Rokich, D. P., Dunn, R. R., Merritt, D. J., Majer, J. D., & Dixon, K. W. (2006). Influence of polymer seed coatings, soil raking, and time of sowing on seedling performance in post-mining restoration. Restoration Ecology, 14(2), 267-277	[Unlikely. Small seeds could potentially be externally dispersed, but seeds are canopy stored (bradysporous) and only released following fire or other major disturbances] "Table 1. Eleven Banksia woodland species used in this study, showing the family, seed syndrome, life form, seed dormancy classification, and the method used for overcoming seed dormancy" [Kunzea ericifolia - Seed Syndrome = Bradysporous]

708	**Propagules survive passage through the gut**	**n**
	Source(s)	**Notes**
	Toelken, H. R. (1996). A revision of the genus Kunzea (Myrtaceae) I. the Western Australian section Zeanuk. Journal of the Adelaide Botanic Garden, 17: 29-106	"Fruit an um-shaped capsule with locules more or less bulging and calyx lobes erect."]Not fleshy-fruited or adapted for consumption by animals. Unlikely to be internally dispersed]

801	**Prolific seed production (>1000/m2)**	
	Source(s)	**Notes**
	Sweedman, L. & Merritt, D. 2006. Australian seeds: a guide to their collection, identification and biology. Csiro Publishing, Collingwood, Australia	Unknown. Seeds small (<1 mm length) and could be produced in large numbers

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	Bell, D., Plummer, J., & Taylor, S. (1993). Seed Germination Ecology in Southwestern Western Australia. Botanical Review, 59(1), 24-73	[Canopy stored seeds may form a persistent seed bank on plants. Longevity uncertain] "In addition to the soil seed bank, southwestern Western Australia has a second major source of seeds. Particular species of the Proteaceae, Myrtaceae and Casuarinaceae carry seed reserves in protective fruits on the plant itself (Lamont et al., 1991). The jarrah forest carries only a limited number of canopy seed storage or serotinous seed species. Bellairs and Bell (1990a) estimate 7 seeds m- 2 for the jarrah forest, but in kwongan communities of drier regions in Western Australia, the canopy stored seed component of the vegetation can total more than 1100 seeds m- 2. Canopy seed store species can be both obligatory re-seeding species and resprouting fire response syndrome species. Lamont and co-workers (l 99 l) estimate there are in excess of 350 serotinous species in Western Australia. The proportion of on-plant seed storage species tends to increase with decreasing average annual rainfall in southwest Western Australia (Bellairs & Bell, 1990a), but particular soil types do not seem to influence this form of seed store. As with the general trend between fire reseeding and resprouting species, the obligate re-seeding, serotinous species tend to produce greater numbers of seeds per plant than serotinous species, which are capable of resprouting following severe fire (Bellairs & Bell, 1990a)." ... "Appendix I" [Kunzea ericifolia - Seed storage syndrome = On-Plant]

Qsn #	Question	Answer
	Turner, S. R., Pearce, B., Rokich, D. P., Dunn, R. R., Merritt, D. J., Majer, J. D., & Dixon, K. W. (2006). Influence of polymer seed coatings, soil raking, and time of sowing on seedling performance in post-mining restoration. Restoration Ecology, 14(2), 267-277	[Possible forms a long lived "canopy" seed bank. Seeds are canopy stored (bradysporous) and only released following fire or other major disturbances] "Table 1. Eleven Banksia woodland species used in this study, showing the family, seed syndrome, life form, seed dormancy classification, and the method used for overcoming seed dormancy" [Kunzea ericifolia - Seed Syndrome = Bradysporous]

803	Well controlled by herbicides	y
	Source(s)	**Notes**
	CABI. (2020). Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc	"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. ericifolia 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	y
	Source(s)	**Notes**
	Ole Lantana's Seed Store. (2020). Kunzea ericifolia. https://www.olelantanaseeds.com.au. [Accessed 13 Aug 2020]	"It responds very well to pruning immediately after flowering."
	Bell, D., Plummer, J., & Taylor, S. (1993). Seed Germination Ecology in Southwestern Western Australia. Botanical Review, 59(1), 24-73	"Nearly two-thirds of the species of plant communities in southwestern Western Australian plant communities survive severe fires by resprouting from protected buds under bark of above-ground organs, from buds of underground basal lignotubers, or from other underground perennating tissue" … "Appendix I" [Kunzea ericifolia - Fire response syndrome = Resprouter]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	**Notes**
	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 Kunzea may be susceptible to fungal pathogen Austropuccinia psidii] "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 P. psidii (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 P. psidii 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. Austropuccinia psidii is present in the Hawaiian Islands, and may affect Kunzea ericifolia, as it does many genera in the family Myrtaceae

Summary of Risk Traits:

High Risk / Undesirable Traits
• Possibly naturalized in Australia (outside natural range)
• Other species in genus are invasive
• Tolerates many soil types
• Forms dense stands within native range
• Reproduces by seeds
• Seeds dispersed by wind, probably water, and intentionally by people
• May form a persistent, canopy stored (bradysporous) seed bank
• Resprouts after fire

Low Risk Traits
• No reports of invasiveness, but limited evidence of introduction outside native range
• Unarmed (no spines, thorns, or burrs)
• Non-toxic
• Not reported to spread vegetatively
• Reported to reach maturity in 5-6 years

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> Yes. Forms dense stands in native range.
(B) Bird or clearly wind-dispersed?> Yes. Presumably wind-dispersed
(C) Life cycle <4 years? No. Reaches maturity in 5-6 years
Outcome = Evaluate