

Taxon: Leptospermum turbinatum Joy Thomps.

Family: Myrtaceae

Common Name(s): Grampians tea-tree
shiny tea tree

Synonym(s):

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 12 Sep 2020

WRA Score: 1.5

Designation: EVALUATE

Rating: Evaluate

Keywords: Temperate, Shrub, Shade-Tolerant, Canopy Seedbank, Fire Resprouter

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)	Low
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	n
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	n
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	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	y=1, n=0	y

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	n
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)	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
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[No evidence of domestication] "Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."
	Dawson, M. (2012). Australian <i>Leptospermum</i> in cultivation: species and cultivars. <i>New Zealand Garden Journal</i> 15(2): 14-22	[No evidence] " <i>Leptospermum turbinatum</i> Joy Thomps. is a similar species and often confused with <i>L. nitidum</i> . It has been in cultivation for many years under the name <i>L. nitidum</i> (Fig. 11A–C) but separated as a new species by Thompson (1989). <i>L. turbinatum</i> can be distinguished by the conical bases to the fruit capsules (instead of the broadly rounded or flat bases in <i>L. nitidum</i>). <i>L. turbinatum</i> is a spreading shrub that grows 1–2 m tall and 1.5–2.5 m across with white flowers (25 mm in diameter). It is called the Grampians tea-tree because it is endemic to the Grampians, Victoria."

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"	Low
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."

202	Quality of climate match data	High
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 10 Sep 2020]	" <i>L.turbinatum</i> is not widely cultivated but should succeed in moist soils in temperate climates."

204	Native or naturalized in regions with tropical or subtropical climates	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Imada, C. (2019). <i>Hawaiian Naturalized Vascular Plants Checklist</i> (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence. <i>Leptospermum laevigatum</i> , <i>Leptospermum morrisonii</i> , <i>Leptospermum petersonii</i> , <i>Leptospermum polygalifolium</i> , and <i>Leptospermum scoparium</i> are recorded as naturalized in the Hawaiian Islands

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 10 Sep 2020]	" <i>L.turbinatum</i> is not widely cultivated but should succeed in moist soils in temperate climates."

301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Imada, C. (2019). <i>Hawaiian Naturalized Vascular Plants Checklist</i> (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence. <i>Leptospermum laevigatum</i> , <i>Leptospermum morrisonii</i> , <i>Leptospermum petersonii</i> , <i>Leptospermum polygalifolium</i> , and <i>Leptospermum scoparium</i> are recorded as naturalized in the Hawaiian Islands

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

Qsn #	Question	Answer
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
	Weber, E. 2017. Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"Leptospermum laevigatum" ... "This shrub is native to coastal heath communities in Australia. The plant is tolerant of salt spray and invades mainly coastal vegetation. It can form extensive and dense thickets displacing the native vegetation and preventing any regeneration of native woody species."
	Smith, C.W. 1985. Impact of Alien Plants on Hawaii's Native Biota. Pp. 180-250 in Stone & Scott (eds.). Hawaii's terrestrial ecosystems: preservation & management. CPSU, Honolulu, HI	[Leptospermum scoparium] This small, scrubby tree forms thickets which crowd out other plants. On Lanai, it has infested goat (Capra hircus)-eroded ridgetops, resulting in their stabilization. It appears to have allelopathic activity like many other members of the Myrtaceae. The seeds are dispersed by wind." ... "It is elevation found in mesic habitats between 300-700 m. The principal infestations are on Lana'i and above La'ie in the Ko'olau Mountains, Oahu."
	WRA Specialist. (2020). Personal Communication	Leptospermum polygalifolium is targeted for control by the Ko'olau Mountains Watershed Partnership, Oahu, Hawaiian Islands

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2020). Growing Native Plants. <i>Leptospermum turbinatum</i> . https://www.anbg.gov.au . [Accessed 10 Sep 2020]	[No evidence] "A spreading shrub, 1-2 m high by 1.5-2.5 m across. The glossy leaves are elliptical to obovate and up to 2 cm long. The large white flowers are about 2.5 cm in diameter and seen in late spring"
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[No evidence] "Spreading shrub usually 1-2 m in height with (as seen on specimens) close, firm bark; the younger stems rather stout with a short close pubescence, without a flange but with a narrow ridge subtending each leaf-base, the branching rather variable but usually at 45°-60°. Leaves aromatic, mostly rather narrowly divergent, 10-20 or more mm long and usually 4-8 mm wide; somewhat smaller near the flowers, elliptical to obovate or oblanceolate, ultimately glabrous and glossy but the fine spreading pubescence of young leaves rather persistent, thick in texture and flat or minutely infolded near the tip, the apex acuminate and pungent with a rather stout point, the base tapering gradually or more suddenly to a distinct tapering petiole."

Qsn #	Question	Answer
402	Allelopathic	
	Source(s)	Notes
	Ooka, J. K., & Owens, D. K. (2018). Allelopathy in tropical and subtropical species. <i>Phytochemistry Reviews</i> , 17(6), 1225-1237	[Unknown. Other species possess allelopathic properties] "Manuka (<i>Leptospermum scoparium</i>) is an allelopathic shrub originating from Australia and New Zealand that is considered an invasive of cleared grasslands."

403	Parasitic	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Spreading shrub usually 1-2 m in height with (as seen on specimens) close, firm bark" [Myrtaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	Jackson, S.(2003). <i>Australian Mammals: Biology and Captive Management: Biology and Captive Management</i> . CSIRO Publishing, Collingwood	[Unidentified <i>Leptospermum</i> species may are palatable to Australian animals. Palatability to other browsing animals unknown] "Koalas are occasionally found sitting in, and even feeding on, trees of genera other than <i>Eucalyptus</i> (and <i>Corymbia</i>) including <i>Melaleuca</i> , <i>Lophostemon</i> , <i>Banksia</i> , <i>Acacia</i> , <i>Hakea</i> , <i>Pinus</i> , <i>Leptospermum</i> , <i>Allocasuarina</i> and <i>Callitris</i> (Hindell and Lee 1987; Moore and Foley 2000; Phillips and Callaghan 2000; Gifford pers. comm.)." ... "Ringtail possums ... Fresh branches of foliage to eat eg <i>E. ovata</i> , <i>E. dives</i> , <i>E. maculata</i> and <i>Leptospermum</i> spp."

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

Qsn #	Question	Answer
406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Tree Project Inc.(2020). <i>Leptospermum turbinatum</i> . https://www.treeproject.org.au . [Accessed 11 Sep 2020]	"Pests and Disease - Webbing caterpillar"
	Giblin, F. & Carnegie, A. J. (2014). <i>Puccinia psidii</i> (Myrtle Rust) – Australian host list. http://www.anpc.asn.au/resources/Myrtle_Rust.html . [Accessed 11 Sep 2020]	Unknown. A number of <i>Leptospermum</i> species are listed as host species. Unknown if <i>Leptospermum turbinatum</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>Leptospermum turbinatum</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. <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

408	Creates a fire hazard in natural ecosystems	
	Source(s)	Notes
	Zimmer, H., Cheal, D.& Cross, E. 2012. <i>Post-fire Weeds Triage Manual: Black Saturday Victoria 2009– Natural values fire recovery program</i> . Department of Sustainability and Environment, Heidelberg, Victoria	[Occurs in habitats affected by fire. Flammability unknown, but reported to resprout after fires. <i>Leptospermum turbinatum</i> - Resprout Hard-fruit Woodys] "Post-fire response: Often (but not always) limited regeneration from seed post-fire. Sucker or resprout post-fires, sometimes killed by fire (in the most severe fires)."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Dawson, M. (2012). <i>Australian Leptospermum in cultivation: species and cultivars</i> . <i>New Zealand Garden Journal</i> 15(2): 14-22	"Both <i>L. nitidum</i> and a <i>L. turbinatum</i> can be grown in heavy shade and are relatively cold tolerant"
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2020). <i>Growing Native Plants. Leptospermum turbinatum</i> . https://www.anbg.gov.au . [Accessed 10 Sep 2020]	"Suitable for heavy shade"

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes

Qsn #	Question	Answer
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2020). Growing Native Plants. <i>Leptospermum turbinatum</i> . https://www.anbg.gov.au . [Accessed 11 Sep 2020]	"A hardy and showy plant accepting most soils and aspects."
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 11 Sep 2020]	" <i>L. turbinatum</i> is not widely cultivated but should succeed in moist soils in temperate climates."

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Spreading shrub usually 1-2 m in height with (as seen on specimens) close, firm bark"

412	Forms dense thickets	n
	Source(s)	Notes
	Australian Plants online. (1998). <i>Leptospermum</i> . http://anpsa.org.au/APOL11/sep98-3.html . [Accessed 11 Sep 2020]	" <i>Leptospermum turbinatum</i> is restricted to small areas in Victoria and South Australia."
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[No evidence] "Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."

501	Aquatic	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[Terrestrial] "Distribution : Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes."

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 10 Sep 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae

Qsn #	Question	Answer
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 10 Sep 2020]	Family: Myrtaceae Subfamily: Myrtoideae Tribe: Leptospermeae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Spreading shrub usually 1-2 m in height with (as seen on specimens) close, firm bark"

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Royal Botanic Gardens Victoria. (2020). VicFlora Flora of Victoria - <i>Leptospermum turbinatum</i> . https://vicflora.rbg.vic.gov.au/ . [Accessed 10 Sep 2020]	"CVU, DunT, Glep, GGr, OtP, VVP, Wim. Victorian endemic. Confined to the Grampians and nearby Mts Langi Ghiran, Buangor and Ben Nevis. Locally common on sandstone and granitic outcrops."
	Department of Sustainability and Environment (2005) Advisory List of Rare or Threatened Plants in Victoria - 2005. Victorian Department of Sustainability and Environment, East Melbourne, Victoria	<i>Leptospermum turbinatum</i> - r [Rare in Victoria: rare but not considered otherwise threatened - there are relatively few known populations or the taxon is restricted to a relatively small area.]

602	Produces viable seed	y
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. (2020). Growing Native Plants. <i>Leptospermum turbinatum</i> . https://www.anbg.gov.au/ . [Accessed 10 Sep 2020]	"Propagation From seed or cuttings"
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 10 Sep 2020]	"Propagation is easy from seed and cuttings are also successful."

Qsn #	Question	Answer
603	Hybridizes naturally	
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[Unknown. Hybrids documented in genus] "As well, natural hybrids have been found between <i>L. laevigatum</i> and <i>L. myrsinoides</i> , <i>L. parvifolium</i> and <i>L. squarrosus</i> , <i>L. arachnoides</i> and <i>L. squarrosus</i> , <i>L. juniperinum</i> and <i>L. polygalifolium</i> , <i>L. grandifolium</i> and <i>L. sphaerocarpum</i> , and <i>L. nitidum</i> and <i>L. lanigerum</i> . <i>L. emarginatum</i> and <i>L. petersonii</i> have been found to hybridise in cultivation."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[Unknown, but other taxa are self-compatible] "That plants are self-compatible has been shown for <i>L. scoparium</i> in New Zealand (Burrell 1965)."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Williams, S. (2018). <i>A Beekeeper's Guide to Australian Leptospermum Trees and Honey</i> . Simon Williams, Sippy Downs, Qld	"Do bees like <i>Leptospermum</i> flowers? <i>Leptospermum</i> generally has poor pollen and are mainly visited by bees for nectar. Even so, your bees may show a preference for Eucalypts if co-flowering in the region. Selecting sites with little else co-flowering will focus the bees to collect from <i>Leptospermum</i> species."
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Flowers white, c. 25 mm in diameter, single on modified shoots terminating adjacent leafy side-branches, the new growth extending from beyond the flowers after flowering. Bracts very broad, pale yellowish-brown and stiff, the inner and bracteoles longest (the latter somewhat shorter than the final bract) tightly rolled around the young bud, but allowing the pointed bud to protrude, and sometimes held about the opening flower. Hypanthium with a long dense silky pubescence, c. 5 mm long the upper part widely expanded, the lower somewhat tapering and fluted but rounded at the base with a minimal pedicel, the top of the ovary glabrous. Sepals persistent, 5-7 mm long, long-deltoid, with a long, dense, silky pubescence, the tip infolded and minutely hooded. Petals c. 12 mm long. Stamens in bundles of 7-9, c. 5 mm long, the anther-cells c. 0.8 mm long, parallel, much-thickened but wide open and with the outer part deep, recurved and somewhat folded back. Style rather shallowly inset, moderately stout and tapering, with the stigma small in relation to the style."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 12 Sep 2020]	"Propagation is easy from seed and cuttings are also successful." [Resprouts from cutting and fire, but no evidence of vegetative spread]

607	Minimum generative time (years)	
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Qsn #	Question	Answer
	Source(s)	Notes
	Suncrest Nurseries. (2020). <i>Leptospermum turbinatum</i> 'Flat Rock'. https://www.suncrestnurseries.com/pfts_show.php?id=lepttfr . [Accessed 12 Sep 2020]	"This bushy, spreading shrub that reaches 6 feet high at maturity has silky grey-green leaves, bronze-tinted in new growth" [Unknown]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[Small seeds could be inadvertently dispersed, but persistence of capsules on plants makes this unlikely] "Fruit persistent, c. 7-11 mm in diameter, the rim rather broad and woody, the lower part usually rounded and eventually tapering to a narrow base, the surface lifting, later firm and gnarled, the valves very woody, exerted to a rather variable extent, forming a broad- or narrow topped dome, on opening with the surface lifting, the valves usually failing to extend to any extent. Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Dawson, M. (2012). Australian <i>Leptospermum</i> in cultivation: species and cultivars. <i>New Zealand Garden Journal</i> 15(2): 14-22	" <i>Leptospermum turbinatum</i> Joy Thomps. is a similar species and often confused with <i>L. nitidum</i> . It has been in cultivation for many years under the name <i>L. nitidum</i> (Fig. 11A–C) but separated as a new species by Thompson (1989)."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Fruit persistent, c. 7-11 mm in diameter" [No evidence, but possible that seeds could be dispersed through cut flower and foliage uses]

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Fruit persistent, c. 7-11 mm in diameter, the rim rather broad and woody, the lower part usually rounded and eventually tapering to a narrow base, the surface lifting, later firm and gnarled, the valves very woody, exerted to a rather variable extent, forming a broad- or narrow-topped dome, on opening with the surface lifting, the valves usually failing to extend to any extent. Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate." [Small seeds presumably dispersed by wind, and gravity, after capsules dehisce, similar to other species in the genus]

705	Propagules water dispersed	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Fruit persistent, c. 7-11 mm in diameter" ... "Limited to the Grampians and adjacent ranges in western Victoria (Map 9). In sandy soil on rocky sandstone slopes." [Not a riparian species, and seeds remain in capsules, making secondary water dispersal unlikely]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Fruit persistent, c. 7-11 mm in diameter, the rim rather broad and woody, the lower part usually rounded and eventually tapering to a narrow base, the surface lifting, later firm and gnarled, the valves very woody, exerted to a rather variable extent, forming a broad- or narrow-topped dome, on opening with the surface lifting, the valves usually failing to extend to any extent. Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[No evidence. No means of external attachment] "Fruit persistent, c. 7-11 mm in diameter, the rim rather broad and woody, the lower part usually rounded and eventually tapering to a narrow base, the surface lifting, later firm and gnarled, the valves very woody, exerted to a rather variable extent, forming a broad- or narrow-topped dome, on opening with the surface lifting, the valves usually failing to extend to any extent. Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	[Persistent woody capsules. No evidence of consumption or internal dispersal] "Fruit persistent, c. 7-11 mm in diameter, the rim rather broad and woody, the lower part usually rounded and eventually tapering to a narrow base, the surface lifting, later firm and gnarled, the valves very woody, exerted to a rather variable extent, forming a broad- or narrow-topped dome, on opening with the surface lifting, the valves usually failing to extend to any extent. Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."

Qsn #	Question	Answer
801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Mature seeds, c. 4 mm long, irregularly narrowly linear-cuneiform, sigmoid, striate."
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 12 Sep 2020]	"The flowers are followed by woody fruits containing many seeds; the fruits remain unopened until they are removed from the plant or the plant dies." [Densities unknown]

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Thompson, J. (1989). A revision of the genus <i>Leptospermum</i> (Myrtaceae). <i>Telopea</i> 3(3): 301-449	"Fruit persistent, c. 7-11 mm in diameter" [Likely forms a persistent "canopy" seed bank]
	Tree Project Inc.(2020). <i>Leptospermum turbinatum</i> . https://www.treeproject.org.au . [Accessed 11 Sep 2020]	"Seed retains viability for several years stored at room temperature."
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 10 Sep 2020]	"The flowers are followed by woody fruits containing many seeds; the fruits remain unopened until they are removed from the plant or the plant dies."

803	Well controlled by herbicides	
	Source(s)	Notes
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching, L. 2003. <i>Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide</i> . CTAHR, UH Manoa, Honolulu, HI	" <i>Leptospermum scoparium</i> ... Reported to be sensitive to triclopyr" [Related invasive taxon controlled by herbicides. Efficacy on <i>L. turbinatum</i> unknown]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	Zimmer, H., Cheal, D. & Cross, E. 2012. <i>Post-fire Weeds Triage Manual: Black Saturday Victoria 2009 – Natural values fire recovery program</i> . Department of Sustainability and Environment, Heidelberg, Victoria	[<i>Leptospermum turbinatum</i> - Resprout Hard-fruit Woody] "Post-fire response: Often (but not always) limited regeneration from seed post-fire. Sucker or resprout post-fires, sometimes killed by fire (in the most severe fires)."
	Australian Native Plant Society. (2020). <i>Leptospermum turbinatum</i> . http://anpsa.org.au/l-tur.html . [Accessed 10 Sep 2020]	[Tolerates severe pruning] "Plants prefer full sun or partial shade and may be pruned severely if necessary."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Giblin, F. & Carnegie, A. J. (2014). <i>Puccinia psidii</i> (Myrtle Rust) – Australian host list. http://www.anpc.asn.au/resources/Myrtle_Rust.html . [Accessed]	Unknown. A number of <i>Leptospermum</i> species are affected by <i>Austropuccinia psidii</i> . Impacts unspecified

Summary of Risk Traits:

High Risk / Undesirable Traits

- Other species are invasive
- Moderately flammable (could increase fire risk)
- Shade tolerant
- Tolerates many soil types
- Reproduces by seeds
- Seeds in persistent woody capsules; likely dispersed by wind, and intentionally cultivated by people
- Persistent capsules may result in a persistent canopy seed bank
- Resprouts after fire and pruning

Low Risk Traits

- A temperate species unlikely to be a threat in warmer, lower elevation regions of tropical island ecosystems
- No reports of invasiveness or naturalization
- Unarmed (no spines, thorns, or burrs)
- Non-toxic
- Not reported to spread vegetatively

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> Yes. Tolerates heavy shade. Not known to form dense stands

(B) Bird or clearly wind-dispersed?> Presumably wind-dispersed

(C) Life cycle <4 years? Unknown

Outcome = Evaluate further