Taxon: Acacia pendula A. Cunn. ex G. Don **Family:** Fabaceae

Common Name(s): boree
myall acacia
silver leaf boree
weeping myall

Synonym(s): Racosperma pendulum (A. Cunn. ex

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 29 Dec 2017

WRA Score: 8.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Naturalizing Tree, Fodder, N-Fixing, Thicket-Forming, Coppices

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)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed		
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	y=1, n=0	n
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
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	y
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	y=1, n=-1	y
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	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	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	n
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	y
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**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[Not domesticated] "The occurrence of myall is restricted to the plains and lower slopes of the mid to upper Murray–Darling drainage basin. It extends inland of the Great Dividing Range from the Emerald region in central Queensland, south through New South Wales to parts of the far north of Victoria, including an outlier in the Little Desert area."

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. 2017. Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. 2017. 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"**	**High**
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 27 Dec 2017]	"Native: Australasia Australia: Australia - New South Wales, - Queensland, - Victoria"
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"The occurrence of myall is restricted to the plains and lower slopes of the mid to upper Murray–Darling drainage basin. It extends inland of the Great Dividing Range from the Emerald region in central Queensland, south through New South Wales to parts of the far north of Victoria, including an outlier in the Little Desert area." [Range extends into subtropical latitudes]

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 27 Dec 2017]	

203	**Broad climate suitability (environmental versatility)**	**n**

Qsn #	Question	Answer
	Source(s)	**Notes**
	Webb, D. B., Wood, P. J., Smith, J. P. & Henman, G. S. 1984 A Guide to Species Selection for Tropical and Sub-Tropical Plantations. University of Oxford, Oxford UK	"Acacia pendula ... ALTITUDINAL RANGE •••• 0-500 m"
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Climate: Altitudinal range: 90–35 m; Hottest/coldest month: 32–38°C/4–7°C; Frost incidence: moderate (1–20 frosts per year); Rainfall: 400–650 mm per year, uniform to summer max. in the north of its range"
	SelecTree. "Acacia pendula Tree Record." 1995-2017. https://selectree.calpoly.edu/tree-detail/acacia-pendula . [Accessed 28 Dec 2017]	"USDA Hardiness Zones 9 - 11."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"The occurrence of myall is restricted to the plains and lower slopes of the mid to upper Murra –Darling drainage basin. It extends inland of the Great Dividing Range from the Emerald region in central Queensland, south through New South Wales to parts of the far north of Victoria, including an outlier in the Little Desert area." [Range extends into subtropical latitudes]

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	**Notes**
	Royal Botanic Gardens Victoria. 2017. VicFlora Flora of Victoria - Acacia pendula. https://vicflora.rbg.vic.gov.au. [Accessed 27 Dec 2017]	"Because of the pale, silvery foliage and form of the crown of the tree, it has been cultivated extensively in this country and abroad, for example in Iran and Kuwait."
	Little Jr., E.L. & Skolmen, R.G. 1989. Common forest trees of Hawaii: (native and introduced). USDA Agriculture Handbook No. 679. USDA Forest Service, Washington, D.C.	34 Acacia pendula were planted in Honouliuli Forest Reserve, Oahu in 1931

301	Naturalized beyond native range	y
	Source(s)	**Notes**
	Post, J. A., Kleinjan, C. A., Hoffmann, J. H., & Impson, F. A. C. (2010). Biological control of Acacia cyclops in South Africa: the fundamental and realized host range of Dasineura dielsi (Diptera: Cecidomyiidae). Biological Control, 53(1), 68-75	"Due to the scarcity of A. implexa and A. pendula in South Africa, these species were not investigated further." [Scarce, and with no evidence of naturalization. Other Acacia species evaluated for biological control]

Qsn #	Question	Answer
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	"During investigations undertaken for this paper, it has been observed that some planted specimens of Acacia pendula in the Hunter (morpho-type A) are showing signs of naturalisation, particularly in those situations where ground disturbance has occurred. Good recruitment and/ or root suckering has occurred at the Bingleburra (East Gresford) population (Figure 5), the Singleton Army Training Area and at a disused farm near Muswellbrook." ... "Acacia pendula has not previously been reported naturalising in regions outside of its accepted distributional range, although VICDSE (2009) includes the species in the low risk category of their environmental weed list for the Inland Plains bioregion (a curiosity, since this species is also listed as threatened in Victoria)." ... "Given the propensity for ornamental planting of Acacia pendula, it is surprising that naturalised populations have not been reported previously."
	Motloung, R., Robertson, M., Rouget, M., & Wilson, J. (2014). Forestry trial data can be used to evaluate climate-based species distribution models in predicting tree invasions. NeoBiota 20: 31-48	"Table 1. The number of government forestry trials, the number of successful trials; the number of records in SAPIA, the number of QDGCs occupied in South Africa, Lesotho and Swaziland; and status in southern Africa for the species explored in the study." [A. pendula - Status in southern Africa = Introduced. This is in contrast to other species that are listed as Naturalized or Invasive]
	Ross, J. H. (1975). The naturalized and cultivated exotic Acacia species in South Africa. Bothalia, 11(4), 463-470	[Cultivated] "Recorded from a Johannesburg park, Hobson sub PRE 32341: Middelburg, Cape, Loock sub PRE 32340."
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2017. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/. [Accessed 27 Dec 2017]	No evidence in Hawaiian Islands to date

302	Garden/amenity/disturbance weed	
	Source(s)	**Notes**
	Shire of Yarra Ranges Streetscape Strategy. 2008. Street Tree Species List Information Sheet. http://fe.yarraranges.vic.gov.au. [Accessed 28 Dec 2017]	"Characteristics indicate that this species may present a weed threat as it colonises or suckers after disturbance and fire. Low incidence in urban areas."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Possibly. Cited as a weed, but impacts unverified.

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**

Qsn #	Question	Answer
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	[Designated as low risk of becoming a weed outside its natural range in Australia] 'Acacia pendula has not previously been reported naturalising in regions outside of its accepted distributional range, although VICDSE (2009) includes the species in the low risk category of their environmental weed list for the Inland Plains bioregion (a curiosity, since this species is also listed as threatened in Victoria)."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Included in an advisory list of environmental weeds of the Inland Plains bioregions of Victoria. Unable to access webpage from which this designation was derived.

305	Congeneric weed	y
	Source(s)	**Notes**
	Le Maitre, D. C., Gaertner, M., Marchante, E., Ens, E. J., Holmes, P. M., Pauchard, A., O'Farrell, P. J., Rogers, A. M., Blanchard, R., Blignaut, J. & Richardson, D. M. (2011). Impacts of invasive Australian acacias: implications for management and restoration. Diversity and Distributions, 17(5): 1015-1029	"Case studies are used to identify similarities and differences between three regions severely affected by invasions of Australian acacias: Acacia dealbata in Chile, Acacia longifolia in Portugal and Acacia saligna in South Africa." ... "Australian acacias have a wide range of impacts on ecosystems that increase with time and disturbance, transform ecosystems and alter and reduce ecosystem service delivery. A shared trait is the accumulation of massive seed banks, which enables them to become dominant after disturbances. Ecosystem trajectories and recovery potential suggest that there are important thresholds in ecosystem state and resilience. When these are crossed, options for restoration are radically altered; in many cases, autogenic (self-driven and self-sustaining) recovery to a preinvasion condition is inhibited, necessitating active intervention to restore composition and function."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Several Acacia species are invasive
	CABI, 2017. Invasive Species Compendium. Wallingford , UK: CAB International. www.cabi.org/isc	Several Acacia species are invasive

401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[No evidence] "Largest trees of myall attain heights of 12 m, but most are in the range 4–8 m tall. The trunk, which has a dbh up to 30 cm, usually divides into ascending branching at or up to 4 m from ground level. The canopy has a silvery appearance due to the presence of fine hairs on the phyllodes. Although crown branching is ascending, the terminal branchlets and foliage are strongly pendulous, sometimes extending to ground level."
	Ross, J. H. (1975). The naturalized and cultivated exotic Acacia species in South Africa. Bothalia, 11(4), 463-470	Acacia pendula" ... "Unarmed tree or shrub."

402	Allelopathic	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	[No evidence] "Many stands of Acacia pendula in the Hunter occur in areas depauperate in understorey and ground layer vegetation, a feature not evident in stands further west (e.g. Porteners 1993). Allelopathy (the inhibition of germination and growth of other plants through the release of chemicals into the environment) may be acting in these cases; this will influence the diagnosis and recognition of a community characterised by Acacia pendula (such as those Hunter Valley communities currently listed under legislation). Typically, the more hardy and adaptable species are likely to overcome such localised changes to the environment, while others will succumb. Most chemical compounds released by plants are secondary substances produced as a by product of primary metabolic processes, some beneficial to other plants and some harmful (Lorenzo et al. 2010). While Acacia pendula is not yet reported to be allelopathic, many other Acacia species are (e.g. Hameed et al 2011; Lorenzo et al. 2012)."

403	Parasitic	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Largest trees of myall attain heights of 12 m, but most are in the range 4–8 m tall." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	**Notes**
	National Research Council. 2002. Tropical Legumes: Resources for the Future. Books for Business, New York	"Acacia pendula, Weeping Myall" ... "Its silvery white foliage Is readily eaten by sheep and cattle and is thought to be more palatable and nutritious than that of mulga (Acacia aneura). In many areas uncontrolled grazing has exterminated this species. In the interior savanna woodlands of New South Wales and Queensland, the myall makes an excellent standby fodder for drought years."
	Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. & Leigh, J.H. 2011. Plants of Western New South Wales. CSIRO Publishing, Collingwood, Australia	"The foliage is relatively palatable to stock and during droughts the trees have been lopped for forage, a practice which was far more common in the past than it is at present; very old trees do not respond well to lopping and many have succumbed for this reason."

405	Toxic to animals	n
	Source(s)	**Notes**
	National Research Council. 2002. Tropical Legumes: Resources for the Future. Books for Business, New York	[No evidence] "Acacia pendula, Weeping Myall" ... "Its silvery white foliage Is readily eaten by sheep and cattle and is thought to be more palatable and nutritious than that of mulga (Acacia aneura)."
	Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. & Leigh, J.H. 2011. Plants of Western New South Wales. CSIRO Publishing, Collingwood, Australia	[No evidence] "The foliage is relatively palatable to stock and during droughts the trees have been lopped for forage, a practice which was far more common in the past than it is at present; very old trees do not respond well to lopping and many have succumbed for this reason."

Qsn #	Question	Answer
	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

406	Host for recognized pests and pathogens	
	Source(s)	**Notes**
	Post, J. A., Kleinjan, C. A., Hoffmann, J. H., & Impson, F. A. C. (2010). Biological control of Acacia cyclops in South Africa: the fundamental and realized host range of Dasineura dielsi (Diptera: Cecidomyiidae). Biological Control, 53(1), 68-75	"A rich assemblage of gall midges is associated with the reproductive structures of Australian Acacia species (Adair, 2004; Adair et al., 2000; Kolesik et al., 2005)." ... "One of the species is Dasineura dielsi Rübsaamen which has become widely established as a biological control agent against A. cyclops in South Africa (Adair, 2005)." ... "In 2001, D. dielsi was discovered to have become established on A. cyclops at the locality where host-specificity tests had been performed. Based on the results of the host-specificity tests, official approval for release was, however, also granted (Adair, 2005). The midge proceeded to proliferate with extraordinary rapidity on A. cyclops. As its numbers increased in South Africa, D. dielsi galls were soon noted on A. melanoxylon (Adair, 2005) and then, as anticipated, on A. longifolia and A. implexa. Shortly thereafter, galls were also recorded on Acacia saligna and Acacia pendula A. Cunn. ex G. Don. (Impson et al., 2009a) and, more recently (October 2009), on Acacia floribunda (Vent.) Willd. in South Africa."
	SelecTree. "Acacia pendula Tree Record." 1995-2017. https://selectree.calpoly.edu/tree-detail/acacia-pendula . [Accessed 28 Dec 2017]	"Pests & Disease Information - Susceptible to Caterpillars, Root Rot."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	**Notes**
	The University of Arizona. 2017. Campus Arboretum. Acacia pendula. https://apps.cals.arizona.edu/arboretum/taxon.aspx?id=843. [Accessed 28 Dec 2017]	"Allergen: Non-allergenic ... Toxicity: Benign"
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	**Notes**
	Australian Plants Society (Victoria). 2017. Fire Resistant and Retardant Plants. https://apsvic.org.au/fire-resistant-and-retardant-plants/. [Accessed 28 Dec 2017]	"Fire Retardant Plants. Plants that will not burn in the first wave of a bushfire, but may burn once dried out:" [Includes Acacia pendula]
	ACT Government. (2015). Design Standards for Urban Infrastructure. Plant Species for Urban Landscape Projects in Canberra - Botanical Name: Acacia pendula (Ape). http://www.tccs.act.gov.au/. [Accessed 28 Dec 2017]	"Low flammability"

Qsn #	Question	Answer
	Maher, N. 2016. Gardening in bushfire areas. Murrumbidgee Landcare Incorporated. Wagga Wagga, NSW. http://murrumbidgeelandcare.asn.au/. [Accessed 28 Dec 2017]	"selection of local plants which are generally thought to be more suitable in bushfire areas" [Includes Acacia pendula]

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	**Notes**
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. Acacia pendula. https://www.anbg.gov.au/gnp/interns-2007/acacia-pendula.html. [Accessed 28 Dec 2017]	"Acacia pendula prefers slightly fertile, well-drained sandy soils, full sun, and occasional watering. However, as a drought tolerant plant, it can survive long periods without watering at all, and will grow in part shade."
	Wrigley, J. W. & Fagg, M. 2013. Australian Native Plants. Sixth Edition. New Holland Publishers, Sydney	"Cultivation Handsome foliage plant for dry areas. Needs full sun."
	SelecTree. "Acacia pendula Tree Record." 1995-2017. https://selectree.calpoly.edu/tree-detail/acacia-pendula . [Accessed 28 Dec 2017]	"Exposure Full Sun to Partial Shade."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	**Notes**
	Australian National Botanic Gardens and Centre for Australian National Biodiversity Research. 2015. Growing Native Plants. Acacia pendula. https://www.anbg.gov.au/gnp/interns-2007/acacia-pendula.html. [Accessed 28 Dec 2017]	"In its native environment, it often grows in alluvial soils (soils that have been washed into by ancient seas, and consisting of sand, gravel, silt and clay). It is also found in relatively heavy clay soils in Victoria."
	Boxshall, B. & Jenkyn, T. 2000. Farm Forestry Species Profile for North Central Victoria. Weeping myall - Acacia pendula. worldwidewattle.com/speciesgallery/descriptions/dpi/pendula.pdf	"Its wide distribution reflects the ability of Acacia pendula to tolerate a wide range of soil conditions that may be either saline, neutral, slightly acidic or alkaline. In North Central Victoria this species is probably best suited to the clay soils of the northern plains."
	SelecTree. "Acacia pendula Tree Record." 1995-2017. https://selectree.calpoly.edu/tree-detail/acacia-pendula . [Accessed 28 Dec 2017]	"Moist to Dry Soil. Clay, Loam or Sand Texture. Slightly Acidic to Highly Alkaline Soil pH."
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Soils usually have heavy textured clay subsoil which are mainly grey, brown and black clays that may also be alkaline or saline."
	Village Nurseries. 2017. Acacia pendula. https://www.villagenurseries.com. [Accessed 28 Dec 2017]	"Tolerates a variety of soil types (provided they're well-drained), requires little water once established, and thrives in a full sun exposure."

Qsn #	Question	Answer
411	**Climbing or smothering growth habit**	**n**
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Small tree with silvery, pendulous foliage, which often droops to ground level."

412	**Forms dense thickets**	**y**
	Source(s)	**Notes**
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	"Many stands of Acacia pendula have formed dense thickets of plants as a result of root suckering following the easing of grazing pressure; indeed, new stands are now emerging from subterranean roots in grazing land where stock have been completely removed."
	Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. & Leigh, J.H. 2011. Plants of Western New South Wales. CSIRO Publishing, Collingwood, Australia	"Myall is often found in extensive monospecific communities;"
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[Able to form pure stands] "Myall grows in low or open woodlands and grows in either pure stands or is associated with species such as poplar box (E. populnea), belah (Casuarina cristata), black box (E. largiflorens), coolibah (E. coolabah), gidgee (A. cambagei), cooba (A. salicina) and yarran (A. omalophylla)."

501	**Aquatic**	**n**
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"This species grows on depositional landforms that include plains, seasonal drainage lines and the lower slopes of undulating terrain."

502	**Grass**	**n**
	Source(s)	**Notes**
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 27 Dec 2017]	Family: Fabaceae (alt.Leguminosae) Subfamily: Caesalpinioideae Tribe: Acacieae

503	**Nitrogen fixing woody plant**	**y**
	Source(s)	**Notes**
	Brewbaker, J. L. (1989). Nitrogen fixing trees for fodder and browse in Africa. Pp. 55-70 In Alley farming in the humid and subhumid tropics: proceedings of an international workshop held at Ibadan, Nigeria, 10-14 Mar. 1986. IDRC, Ottawa, ON, CA	"Acacia is the largest and most ecologically diverse of the N-fixing genera (an estimated 1 200 species, about 800 in the Australasian assemblage) and fodder use in this genus has been widely documented ..."

Qsn #	Question	Answer
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html. [Accessed 27 Dec 2017]	Family: Fabaceae (alt.Leguminosae) Subfamily: Caesalpinioideae Tribe: Acacieae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Largest trees of myall attain heights of 12 m, but most are in the range 4–8 m tall. The trunk, which has a dbh up to 30 cm, usually divides into ascending branching at or up to 4 m from ground level."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"The occurrence of myall is restricted to the plains and lower slopes of the mid to upper Murray–Darling drainage basin. It extends inland of the Great Dividing Range from the Emerald region in central Queensland, south through New South Wales to parts of the far north of Victoria, including an outlier in the Little Desert area."
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	[May be expanding outside natural range] "Acacia pendula, Weeping Myall, (family Fabaceae) is the most legislatively protected plant species in the New South Wales Hunter Valley. Under the NSW Threatened Species Conservation Act 1995 it is listed as an Endangered Population (in the Hunter Valley) and as a component of two Endangered Ecological Communities (one in the Hunter, one elsewhere in NSW); it is also listed as a Critically Endangered Ecological Community (in the Hunter Valley) on the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 and listed as threatened in three other eastern Australian States." ... "Collectively, these findings provide a strong circumstantial case that Acacia pendula was absent from the Hunter at the time of European settlement; this has important implications for the conservation and management of Hunter stands. Rather than being a threatened species in the Hunter Valley, it is postulated that Acacia pendula has been intentionally and/or accidentally introduced to the region, and may now be imposing a new and emerging threat to the endangered grassy woodlands and forests there. There is now an urgent need for genetic studies to clarify the origins of the current Hunter Valley stands, and to define the taxonomic limits of Acacia pendula and its close relatives."

602	Produces viable seed	y
	Source(s)	**Notes**
	Wrigley, J. W. & Fagg, M. 2013. Australian Native Plants. Sixth Edition. New Holland Publishers, Sydney	"Acacia pendula ... Propagation From scarified seed."

Qsn #	Question	Answer
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Pods, narrowly oblong, thin, fl at, 4–13 × 0.9–1.2 cm, more or less papery, with reticulate transverse nerves, minutely hairy; margins winged, wing 2–3 mm wide. Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous. Mature Oct.–Dec., but not often produced."

603	Hybridizes naturally	
	Source(s)	**Notes**
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	[Unknown if natural hybrids occur] "Arguably, some of the non-pendulous forms of Acacia pendula may in fact represent forms or hybrid swarms of Acacia melvillei–Acacia homalophylla, which may or may not be native to the Hunter, while pendulous forms may have been planted: these issues are addressed later in this paper."

604	Self-compatible or apomictic	y
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Inflorescences: Racemes, 2 to 7-headed, short, 0.2–0.9 cm long, minutely hairy; peduncles 3–8 mm long, heads globular, 12 to 25-flowered, light golden; flowers 5-merous, sepals free to partially fused. Flowering is unreliable but occurs mainly during May–Sept."
	Roubik, D.W. 1995. Pollination of cultivated plants in the tropics. FAO Services Bulletin 118. FAO, Rome, Italy	[Self-compatible if pollinators transfer pollen] "Appendix I ... Acacia pendula ... Breed. Sys. SC, OC ... Pollinators bee, bird?" [OC = when used in combination with SC, signifying that the pollen must be carried by a vector - the plant is not capable of selling]

605	Requires specialist pollinators	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Inflorescences: Racemes, 2 to 7-headed, short, 0.2–0.9 cm long, minutely hairy; peduncles 3–8 mm long, heads globular, 12 to 25-flowered, light golden; flowers 5-merous, sepals free to partially fused. Flowering is unreliable but occurs mainly during May–Sept."
	Roubik, D.W. 1995. Pollination of cultivated plants in the tropics. FAO Services Bulletin 118. FAO, Rome, Italy	[Self-compatible if pollinators transfer pollen] "Appendix I ... Acacia pendula ... Breed. Sys. SC, OC ... Pollinators bee, bird?" [OC = when used in combination with SC, signifying that the pollen must be carried by a vector - the plant is not capable of selling]

606	Reproduction by vegetative fragmentation	y
	Source(s)	**Notes**
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	"Many stands of Acacia pendula have formed dense thickets of plants as a result of root suckering following the easing of grazing pressure; indeed, new stands are now emerging from subterranean roots in grazing land where stock have been completely removed."

607	Minimum generative time (years)	

Qsn #	Question	Answer
	Source(s)	**Notes**
	Doran, J. C. & Turnbull, J. W.1997. Australian Trees and Shrubs: species for land rehabilitation and farm planting in the tropics. ACIAR Monograph No. 24. Canberra, Australia	"Acacia pendula ... Growth It is a slow growing species." [Time to maturity unspecified. Probably >4 years]
	Shire of Yarra Ranges Streetscape Strategy. 2008. Street Tree Species List Information Sheet. http://fe.yarraranges.vic.gov.au. [Accessed 28 Dec 2017]	"growth rate - Slow to moderate"

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Pods, narrowly oblong, thin, fl at, 4–13 × 0.9–1.2 cm, more or less papery, with reticulate transverse nerves, minutely hairy; margins winged, wing 2–3 mm wide. Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous." [Seeds relatively small, but no means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**
	Royal Botanic Gardens Victoria. 2017. VicFlora Flora of Victoria - Acacia pendula. https://vicflora.rbg.vic.gov.au. [Accessed 28 Dec 2017]	"Because of the pale, silvery foliage and form of the crown of the tree, it has been cultivated extensively in this country and abroad, for example in Iran and Kuwait."
	Malcolm, P. 2012. Acacia pendula. The IUCN Red List of Threatened Species 2012: e.T19892147A20000024. http://dx.doi.org/10.2305/IUCN.UK.2012.RLTS.T19892147A20000024.en. [Accessed 28 Dec 2017]	"It is cultivated in many countries and used as a street tree or in many other landscape locations. The tree's hard, close grain, dark colour and heavy weight wood make for an excellent windbreak and has been used to make boomerangs for Aboriginal hunters. The oil from fresh cuts omit a pleasant rich violet fragrance that women placed in their garment drawers. The trees heartwood colour of deep chocolate brown to dark toffee orange has drawn the interest of fine wood working craftsman for the manufacturing of furniture (Arid Zones Trees 2010). "
	Boxshall, B. & Jenkyn, T. 2000. Farm Forestry Species Profile for North Central Victoria. Weeping myall - Acacia pendula. worldwidewattle.com/speciesgallery/descriptions/dpi/pendula.pdf	"Weeping myall is planted as a specimen tree in gardens and public spaces, for shelter and fodder on farms, and along roadsides throughout the northern parts of the region."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[No evidence. Unlikely. Slow-growing tree with relatively large pods & seeds] Fruits: Pods, narrowly oblong, thin, flat, 4–13 × 0.9–1.2 cm, more or less papery, with reticulate transverse nerves, minutely hairy; margins winged, wing 2–3 mm wide. Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous. Mature Oct.–Dec., but not often produced."

Qsn #	Question	Answer
704	**Propagules adapted to wind dispersal**	**n**
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Fruits: Pods, narrowly oblong, thin, fl at, 4–13 × 0.9–1.2 cm, more or less papery, with reticulate transverse nerves, minutely hairy; margins winged, wing 2–3 mm wide. Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous." [Winged pods may facilitate some dispersal of pods by wind, but no evidence of wind dispersal found in published literature]

705	**Propagules water dispersed**	**y**
	Source(s)	**Notes**
	Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. & Leigh, J.H. 2011. Plants of Western New South Wales. CSIRO Publishing, Collingwood, Australia	"Dominates vegetation communities on sections of the major river floodplains in the east of the region, particularly on heavy clay soils in the Riverine Plain." [Distribution suggests secondary seed dispersal by water]
	Rogers, K. & Ralph, T. J. 2011. Floodplain Wetland Biota in the Murray-Darling Basin: Water and Habitat Requirements. CSIRO Publishing, Collingwood	[Occurs in riparian areas, which likely disperses pods and seeds] "Little information is available about the flood requirements of weeping myall. While it occurs on floodplains, its distribution appears to relate to its tolerance of flooding (Kidson et al. 2000b) rather than a requirement of flooding for survival. In the Macquarie River region, weeping myall most frequently occurs on gilgais (Metcalfe et al. 2003)."

706	**Propagules bird dispersed**	**n**
	Source(s)	**Notes**
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	[No evidence. Non-arillate] "Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous. Mature Oct.–Dec., but not often produced."

707	**Propagules dispersed by other animals (externally)**	**n**
	Source(s)	**Notes**
	Bell, D. T. (1994). Plant community structure in southwestern Australia and aspects of herbivory, seed dispersal and pollination. Pp. 63-70 In Plant-animal Interactions in Mediterranean-type Ecosystems. Springer Netherlands	"The invertebrates (probably solely ants) of the jarrah forest appear to rapidly collect fruits of a number of the Acacia species and all those collected in large numbers displayed white arils. Ants of the jarrah forests appear to be generalists, with single species of ants choosing arillate seed of a wide range of plant species." ... "Acacia pendula and A. podalyrifolia, two species of this genus without arils, were not favoured in collections by ants."

708	**Propagules survive passage through the gut**	**y**
	Source(s)	**Notes**

Qsn #	Question	Answer
	Bell, S., & Driscoll, C. (2014). Acacia pendula (Weeping Myall) in the Hunter Valley of New South Wales: early explorers' journals, database records and habitat assessments raise doubts over naturally occurring populations. Cunninghamia 14: 179–200	"Commonly, when Acacia pods and seeds are eaten by cattle, seeds pass through the digestive tract unharmed as they are protected to some extent by pod structure (Miller & Coe 1993)." ... "It is more than feasible that consumption of seeds of Acacia pendula and other arid zone Acacias by cattle, followed by 6 days of travel (either from the Liverpool Plains to the Hunter, or within the Hunter Valley itself), could result in the introduction and spread of viable Acacia seed to the region."

801	Prolific seed production (>1000/m2)	n
	Source(s)	**Notes**
	Hunter, J. T. 2006. Vegetation and Floristics of Careunga Nature Reserve. A Report to the New South Wales National Parks and Wildlife Service. J. T. Hunter, Invergowrie NSW	"Acacia pendula sets few fruits and seeds and germination is generally poor with only sporadic recruitment in the field (Beadle 1981)." [Beadle, N.C.W. (1981) The Vegetation of Australia. (Cambridge University Press: Cambridge)]
	Boland, D.J. , Brooker, M.I.H., Chippendale, G.M., Hall, N., Hyland, B.P.M., Johnston, R.D., Kleinig, D.A., McDonald, M.W. & Turner, J.D. 2006. Forest Trees of Australia. CSIRO Publishing, Collingwood, Australia	"Seeds transversely aligned in pod, broadly elliptic, 5–9 mm long, soft, funicle-aril not conspicuous. Mature Oct.–Dec., but not often produced."

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	**Notes**
	Rogers, K. & Ralph, T. J. 2011. Floodplain Wetland Biota in the Murray-Darling Basin: Water and Habitat Requirements. CSIRO Publishing, Collingwood	"Table 2.3: ... Acacia pendula ... Long-lived seeds that are maintained in seed banks. Requires moisture for the germination and establishment of seedlings, no standing water"

803	Well controlled by herbicides	y
	Source(s)	**Notes**
	Cook, B.G. et al. 2005. Tropical Forages: an interactive selection tool., [CD-ROM], SIRO, DPI&F(Qld), CIAT and ILRI. http://www.tropicalforages.info/index.htm. [Accessed]	[Methods of controlling Acacia angustissima would presumably be effective] "Herbicide effects: Can be controlled using basal bark or cut-stump applications of tree -killing herbicides such as fluroxypyr, triclopyr or trichlopyr + picloram. Seedlings can be controlled using complete foliarsprays of fluroxypyr."

Qsn #	Question	Answer
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching,L. 2003. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. CTAHR, UH Manoa, Honolulu, HI	[Methods used for invasive Acacia mearnsii would presumably be effective] "Acacia mearnsii ... Saplings sensitive to foliar applications of triclopyr. Dicamba, glyphosate, and picloram applied cut-surface effective(45); triclopyr probably effective, although applications to drilled holes is probably necessary in larger trees. Cut-surface (notching) applications of picloram provided complete control, glyphosate and dicamba caused 80% control, and 2,4-D was inadequate at Kalaÿe, Molokaÿi. Alton Arakaki (Univ. Hawaÿi) and Ed Misaki (TNC) confirmed the efficacy of picloram but got much better results with glyphosate and dicamba, each resulting in over 90% control at Kamakou Preserve. Basal bark and stump bark treatments with 2,4-D or triclopyr effective. Pat Bily (TNC) reported that basal bark application with triclopyr ester at 20% in oil was effective, as was cut-stump application of triclopyr amine at 50% in water. HAVO staff got good control with triclopyr amine at 10% in water applied to cut stumps (Chris Zimmer, HAVO). Anecdotes indicate that black wattle is sensitive to basal bark treatment with diesel alone and to girdling (stripping the bark)."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	**Notes**
	Bird, P.R., Kearney, G.A. & Jowett, D.W. 1996. Trees & Shrubs for Southwest Victoria. Agriculture Victoria Pastoral & Veterinary Institute, Hamilton Victoria, Australia	"Acacia pendula ... C Species coppice or produce root suckers following death of the trunk"
	Boxshall, B. & Jenkyn, T. 2000. Farm Forestry Species Profile for North Central Victoria. Weeping myall - Acacia pendula. worldwidewattle.com/speciesgallery/descriptions/dpi/pendula.pdf	"It will coppice and produce suckers from damaged roots."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	**Notes**
	WRA Specialist. 2017. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Able to grow in temperate to subtropical climates
• Naturalizing outside native range in Australia
• Several Acacia species have become invasive
• Tolerates many soil types
• Forms pure stands and thickets in native range
• Nitrogen fixing tree; may modify soil nutrients
• Reproduces by seeds and vegetatively by root suckers
• Self-compatible (but requires pollinators for pollen transfer)
• Seeds dispersed by gravity, water, internally by animals & intentionally by people
• Seeds able to be stored for extended periods; May form a persistent seed bank
• Able to coppice & resprout after cutting, browsing & fire

Low Risk Traits
• No current reports of naturalization or invasiveness outside native range
• Unarmed (no spines, thorns, or burrs)
• Provides fodder for livestock
• Non-toxic
• Ornamental
• Slow growing (may take years before reaching reproductive maturity)
• Herbicides effectively control several other invasive Acacia species, & would presumably be effective if needed to control Acacia pendula