

<i>Corymbia intermedia</i> (=Eucalyptus intermedia) (Pink Bloodwood, Red Bloodwood) -- FLORIDA		Answer	Score
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	n	
3.01	Naturalized beyond native range	n	0
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	?	
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	?	
4.05	Toxic to animals	?	
4.06	Host for recognised pests and pathogens		
4.07	Causes allergies or is otherwise toxic to humans		
4.08	Creates a fire hazard in natural ecosystems	?	
4.09	Is a shade tolerant plant at some stage of its life cycle	?	
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	n	0
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat		
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally	y	1
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation		
6.07	Minimum generative time (years)		

7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant		
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed	?	
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides	?	
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
	Total Score	5	
	Implemented Pacific Second Screening	Yes	
	Risk Assessment Results	Evaluate	

	Reference	Source data
1.01		Cultivated but no evidence of selection for reduced weediness.
1.02		Skip to 2.01
1.03		Skip to 2.01
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif) & USDA Plant Hardiness Zone Map, 2012. Agricultural Research Service, U.S. Department of Agriculture. Accessed from http://planthardiness.ars.usda.gov . 2. USDA/ARS-GRIN [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?15948 [Accessed: 8 May 2012]). 3. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	No computer analysis was performed. 1. Global plant hardiness zones (8?-) 9-11 (-12?); equivalent to USDA Hardiness zones 8a-11b+ (north, central, and south zones of Florida). 2. Native distribution: northeast New South Wales and eastern Queensland, Australia. 3. Occurs mainly within 100 km (62.1 mi) of the sea. Fairly common from northern coastal NSW as far north as Mackay in Queensland, and has disjunct occurrences from west of Townsville to Cooktown.
2.02		No computer analysis was performed. 1. Native range is well known; refer to 2.01 source data.
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. Native distribution appears to be in numerous climatic groups (Af, Am, Aw, Cwa, Cfa, Cfb). 2. Altitudinal range: near sea level-1200 m (3937').
2.04	1. Australia's Virtual Herbarium. 2009. http://chah.gov.au/avh/index.jsp . Accessed: 9 May 2012. 2. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. 600 mm-3200 mm (23.6"-126.0+"). 2. Rainfall: 750 mm-2200 mm (29.5"-86.6")
2.05		No evidence.
3.01		No evidence.
3.02		No evidence.
3.03		No evidence.
3.04		No evidence.
3.05	1. Holm, L. et al. <i>A Geographical Atlas of World Weeds</i> . John Wiley and Sons, New York. 1979.	1. The following <i>eucalypts</i> are considered principal weeds in Australia (principal weed in this context is ranked according to the importance of the weed and is usually referring to about the five most troublesome species for the crop): <i>E. cambageana</i> , <i>E. ferruginea</i> , <i>E. gracilis</i> , <i>E. marginata</i> , <i>E. miniata</i> , <i>E. pilularis</i> , <i>E. populnea</i> , <i>E. tetradonta</i> .
4.01		No evidence.

4.02	1. Anonymous. 2009. "Focus on Eucalypts." SAPIA NEWS No. 12. ARC-Plant Protection Research Institute, South Africa. 2. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 1 June 2012. 3. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. It is likely that most Eucalypts are allelopathic-having the potential to suppress understory plants through chemical inhibitors that leach into the soil. 2. There are many reports in global literature of toxic inhibition of germination and growth of other plant species (allelopathic effects), which inhibits the growth of an understory. 3. Concerns expressed about suppression of ground vegetation due to possible allelopathic effects. Allelopathic effects are widely reported and these reports are largely based on laboratory bioassays. If not chemical inhibition then at least accumulation of dead material of the floor of eucalypt plantations hinders regeneration of native species.
4.03		No evidence.
4.04	1. United States Department of Agriculture Permit applications 08-11-106rm and 08-014-101rm received from ArborGen LLC. Field testing of genetically engineered <i>E. grandis</i> X <i>E. urophylla</i> (http://www.aphis.usda.gov/brs/aphisdocs/08_014101rm_ea2.pdf [Accessed: 8/19/2010]).	1. Eucalyptus species are known to produce chemical compounds that are required by the plant for defense against herbivores and pathogens.
4.05	1. <i>Medicinal Plants for Livestock: Eucalyptus spp.</i> Cornell University, Department of Animal Science. http://www.ansci.cornell.edu/plants/medicinal/eucalyp.html . 1 June 2012.	1. " <i>Eucalyptus spp.</i> contain high levels of phenolics and terpenoids which can be toxic. Animals such as the koala which eat Eucalyptus have developed methods for detoxifying the compounds in the liver. In addition, they have bacteria that degrade tannin-protein complexes. Most animals do not have this ability."
4.06		
4.07		
4.08	1. Gill, A.M. "Eucalypts and fires: interdependent or independent?" In: <i>Eucalypt ecology: individuals to ecosystems</i> . Ed. J.E. Williams & J. Woinarski. Cambridge, New York: Cambridge University Press, 1997. 2. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. Eucalypts often are the major source of fuel for fires, but not always. 2. Leaves of eucalypts are relatively slow to breakdown and have a high volatile oil content, which contributes to the severity of fire events in their native Australia.
4.09	1. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. Shade-tolerant sub-canopy [<i>Eucalyptus</i>] species are not known.
4.10	1. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. Largely occurs on loams and clay loams; varies from coastal sand dunes to very coarse sandy soils. Also on deep red loams of volcanic origin.

4.11	1. The Royal Botanic Gardens and Domain Trust (3 June 2012). PlantNET - The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia (version 2.0). http://plantnet.rbgsyd.nsw.gov.au .	1. "Tree to 30 m high".
4.12	1. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	No evidence. 1. Usually a medium-sized tree, 20-30 m tall, sometimes up to 40 m tall, with a long, straight trunk.
5.01	1. Australian Tropical Rainforest Plants. <i>Corymbia intermedia</i> . Accessed 1 June 2012. keys.trin.org.au	1. "Grows in open forest, dry and wet sclerophyll forest and on rain forest margins."
5.02	1. The Royal Botanic Gardens and Domain Trust (30 January 2012). PlantNET - The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia (version 2.0). http://plantnet.rbgsyd.nsw.gov.au .	1. Family: <i>Myrtaceae</i> .
5.03	1. The Royal Botanic Gardens and Domain Trust (30 January 2012). PlantNET - The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia (version 2.0). http://plantnet.rbgsyd.nsw.gov.au .	1. Family: <i>Myrtaceae</i> .
5.04	1. The Royal Botanic Gardens and Domain Trust (3 June 2012). PlantNET - The Plant Information Network System of The Royal Botanic Gardens and Domain Trust, Sydney, Australia (version 2.0). http://plantnet.rbgsyd.nsw.gov.au .	1. "Tree to 30 m high".
6.01		
6.02	1. Pacific Island Ecosystems at Risk (PIER). http://www.hear.org . Via: Beltrati, C. M. (1982) Morphology and anatomy of the seeds and young seedlings of <i>Eucalyptus intermedia</i> . [FT: Morfologia y anatomia das sementes e plantulas de <i>Eucalyptus intermedia</i> R.T. Baker.] Turrialba, 1982, Vol.32, No.3, pp.301-308, 13 ref.	1. Seeds germinate in 4-5 days.

6.03	<p>1. Queensland Government, Department of Environment and Resource Management. Regional ecosystem details for 8.5.1. http://www.derm.qld.gov.au/wildlife-ecosystems/biodiversity/regional_ecosystems/details.php?reid=8.5.1. Accessed 23 May 2012. Internet.</p> <p>2. Dickinson, G.R. et al. date unknown. Inter-specific <i>Corymbia</i> hybrid research; providing new opportunities for plantation expansion in northern Australia. In: Nichols, D. (Ed.), <i>ANZIF 2007 Growing Forest Values Conference, Coffs Harbour, NSW, Australia</i>.</p> <p>3. Barbour, R.C. et al. 2008. The risk of pollen-mediated gene flow from exotic <i>Corymbia</i> plantations into native <i>Corymbia</i> populations in Australia. <i>Forest Ecology and Management</i>, 256: 1-19.</p>	<p>1. <i>Corymbia intermedia</i> open-forest. <i>Corymbia clarksoniana</i> is a common associated species in the canopy. Hybrids or intermediates between <i>C. intermedia</i> and <i>C. clarksoniana</i> are occasionally present.</p> <p>2. Natural inter-sectional hybrids for <i>Rufaria</i> x <i>Politaria</i> (<i>C. intermedia</i> x <i>C. maculata</i>) has been documented (Hill and Johnson 1995).</p> <p>3. Hybrids involving the plantation species <i>C. maculata</i> have been documented with... <i>C. intermedia</i> ... (Supplementary data 2).</p>
6.04		
6.05	<p>1. Pacific Island Ecosystems at Risk (PIER). http://www.hear.org. Via: (a)http://fairhillnursery.com/plea.html (b) Stanley and Ross. 1983. <i>Flora of South-eastern Queensland</i> Vol. 1. Queensland Dept of Primary Industries, Brisbane</p>	<p>1. (a) Large cluster of white flowers attract nectar-feeding birds and are important for honey production. (b) Medium importance as a source of pollen for bees.</p>
6.06		
6.07		
7.01		
7.02		Species is being considered for introduction as a biomass crop.
7.03		
7.04	1. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. Seeds winged, brown or red-brown, ellipsoidal, hilum ventral, close to one edge.
7.05	1. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. Eucalypts should not be planted near rivers/streams. Temporarily flooded or eroded river/stream banks are suitable habitat for spontaneous establishment of seedlings. Additionally, their seeds can be dispersed for long distances by running water.
7.06	1. Southern, S.G. et al. 2004. Review of gene movement by bats and birds and its potential significance for eucalypt plantation forestry. <i>Australian Forestry</i> , 67(1): 44-53.	1. Dispersal in animal droppings does not occur, although many birds eat eucalypt seed, because the seed does not survive passage through the alimentary canal of mammals and birds (Joseph 1986).
7.07	1. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. No adaptations that would suggest that it could attach itself externally to animals. Seeds winged, brown or red-brown, ellipsoidal, hilum ventral, close to one edge.

7.08	1. Southern, S.G. et al. 2004. Review of gene movement by bats and birds and its potential significance for eucalypt plantation forestry. <i>Australian Forestry</i> , 67(1): 44-53.	1. Dispersal in animal droppings does not occur, although many birds eat eucalypt seed, because the seed does not survive passage through the alimentary canal of mammals and birds (Joseph 1986).
8.01		
8.02	1. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. Eucalypt seeds do not have dormancy and seed storage in the soil lasts less than a year.
8.03	1. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In : D. Simberloff & M. Rejmánek, eds. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press.	1. Triclopyr or glyphosate applied to freshly cut stumps can greatly reduce resprouting.
8.04		
8.05		