Eucalyptus amplifolia (Cabbage Gum) -- 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)	n	0
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	n	0
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	n	-2
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	n	0
4.06	Host for recognised pests and pathogens		
4.07	Causes allergies or is otherwise toxic to humans	n	0
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.	?	
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	?	
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	n	0
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally	?	
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators		
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	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	y	1
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	y	1
8.05	Effective natural enemies present in U.S.		
	Total Score	**-2**	
	Implemented Pacific Second Screening	**No**	
	Risk Assessment Results	**Accept**	

	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). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgibin/npgs/html/taxon.pl?401104 (02 June 2008). 3. Rockwood, DL, et al. (1987) Development of *Eucalyptus amplifolia* for woody biomass production. Australian Forest Research 17 (2): 173-178. 4. Rockwood, DL, DeValerio, JT (1986) Promising species for woody biomass production in warm-humid environments. *Biomass* 11: 1-17. 5. Rockwood, D L, et al. (1991) Genetic improvement of *Eucalyptus amplifolia* for frost-frequent areas. *Australian Forestry: The Journal of the Institute of Foresters of Australia* 54 (4): 212-218. 6. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgibin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.). REASSESSMENT: 7. The Royal Botanic Gardens and Domain Trust (2 April 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.	**No computer analysis was performed**. 1. Global plant hardiness zones 9-10. 2. "Distributional range: Native: Australasia: Australia- New South Wales, Queensland". 3. "Eucalyptus amplifolia has potential for short-rotation intensive culture in the warm, humid, summer rainfall conditions of Florida under winter freezes as low as -12°C."; "Eucalyptus amplifolia...is a minor species with a limited distribution in Australia, primarily in New South Wales (Hall 1971)." 4. "Eucalyptus amplifolia, with frost resiliency apparently greater than other eucalypts tested in northern Florida." 5. "Exceptional frost-resilience". 6. Present in New South Wales and Queensland; "NSW subdivisions: NC, CC, SC, NT, CT, ST". REASSESSMENT: 7. Locally dominant, in grassy woodland on deeper, loamy soils, usually on low sites or along watercourses.
2.02		**No computer analysis was performed**. 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. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?401104 (02 June 2008). 3. Rockwood, DL, et al. (1987) Development of Eucalyptus amplifolia for woody biomass production. Australian Forest Research 17 (2): 173-178. 4. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.)	1. Probably only two climatic groups. 2. "Distributional range: Native: Australasia: Australia- New South Wales, Queensland". 3. "*Eucalyptus amplifolia* ...is a minor species with a limited distribution in Australia, primarily in New South Wales (Hall 1971)." 4. Present in New South Wales and Queensland; "NSW subdivisions: NC, CC, SC, NT, CT, ST".
2.04	Australian Government, Bureau of Meteorology (http://www.bom.gov.au/cgi-bin/climate/cgi_bin_scripts/annual-monthly-rainfall.cgi).	For SE Queensland and Eastern New South Wales, the average annual precipitation is up to 2000 mm (78.7 inches/year).
2.05	1. Johnson, LAS, Hill, KD (1990) Eucalyptus amplifolia. Telopea 4: 51. 2. Rockwood, DL, et al. (1987) Development of Eucalyptus amplifolia for woody biomass production. Australian Forest Research 17 (2): 173-178. 3. FAO (1979) Eucalypts for Planting. FAO Forestry Series No. 11. Rome.	1. "Type: Five specimens collected by Naudin from various localities in France and Italy and now housed at P may be regarded as Syntypes (n.v.)." 2. "It has received little attention worldwide, with the few available reports documenting its unsuitability for Uruguay and its success in Libya (FAO 1979)." 3. "Other well-grown eucalypts seen in Libya by Pryor in 1964 were...E. amplifolia".
3.01		No evidence.
3.02		No evidence.
3.03		No evidence.
3.04		No evidence.
3.05	1. Holm, L, et al. (1979) A Geographical Atlas of World Weeds. John Wiley and Sons, New York.	1. *Eucalyptus cambageana* is a principal weed of agriculture in Australia.
4.01		No description of these traits.
4.02		
4.03		No description of parasitism.
4.04	REASSESSMENT: 1. Koalas In Care, Inc. Taree, New South Wales, Australia. http://www.koalasincare.org.au/index.htm. Accessed: 2 April 2012.	REASSESSMENT: 1. *Eucalyptus amplifolia* is considered a primary or secondary browse species for koalas.
4.05		
4.06		
4.07		
4.08		
4.09		

4.10	1. FAO (1979) Eucalypts for planting. FAO Forestry Series No. 11. 2. Rockwood, DL, et al. (1991) Genetic improvement of *Eucalyptus amplifolia* for frost-frequent areas. Australian Forestry: The Journal of the Institute of Foresters of Australia 54 (4): 212-218. 3. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.)	1. "*E. amplifolia* …occurs on poor soils." BUT 2. "Growth on good or amended sites is excellent, but the species may not do well on relatively infertile or acidic sites or in competition with other vegetation." 3. "Loamy soils."
4.11	1. Wu, Z, Raven, PH, eds. (1994) *Eucalyptus amplifolia* . Flora of China. 13: 323-325. Science Press (Beijing) and Missouri Botanical Garden (St. Louis). 2. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.) 3. George, AS, ed. (1980) Flora of Australia. Vol. 19, *Myrtaceae-Eucalyptus* , *Angophora* . Australian Government Publishing Service, Canberra.	1. "Trees." 2. "Tree to 30 m high." 3. "Tree to 30m."
4.12	REASSESSMENT: 1. Boland, D.J. et al. *Forest Trees of Australia* . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	REASSESSMENT: No evidence. 1. Often somewhat busy in habitat and 12-20 m high, or a tree of good form to 30 m or more in height, with a straight bole which may be half the height of the tree.
5.01		Terrestrial.
5.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?401104 (02 June 2008).	1. *Myrtaceae*
5.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?401104 (02 June 2008).	1. *Myrtaceae*
5.04	1. Wu, Z, Raven, PH, eds. (1994) *Eucalyptus amplifolia* . Flora of China. 13: 323-325. Science Press (Beijing) and Missouri Botanical Garden (St. Louis). 2. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.) 3. George, AS, ed. (1980) Flora of Australia. Vol. 19, *Myrtaceae-Eucalyptus* , *Angophora* . Australian Government Publishing Service, Canberra.	1. "Trees." 2. "Tree to 30 m high." 3. "Tree to 30m."
6.01		No evidence.

6.02	1. Carr, DJ, et al. (1984) Initiation, development and anatomy of lignotubers in some species of *Eucalyptus* . Australian Journal of Botany 32: 415-417. 2. Rockwood, DL, et al. (1987) Development of *Eucalyptus amplifolia* for woody biomass production. Australian Forest Research 17 (2): 173-178. 3. Rockwood, DL, et al. (1991) Genetic improvement of *Eucalyptus amplifolia* for frost-frequent areas. Australian Forestry: The Journal of the Institute of Foresters of Australia 54 (4): 212-218.	1. "Seedlings of the following species…were raised from seeds of the stated provenances" [includes E. amplifolia]. 2. "A seed source from Dungog, New South Wales (R.E. Snow, Florida, and G. Althofer, N.S.W., personal communications) grown in northern Florida averaged 1.6 m in height as 8-month-old seedlings." 3. "In late May 1986, seeds were sown...After six weeks, each container was thinned to the largest seedling, and the seedlings were maintained in the greenhouse until mid-August."
6.03	1. Williams, JE and JCZ Woinarski, eds (1997) Eucalypt Ecology: Individuals to Ecosystems. Cambridge University Press, Cambridge, UK.	REASSESSMENT: Reference did not specify if these were natural hybrids. 1. Distributions of 2 hybrids involving *E. amplifolia* (*E. amplifolia* x *robusta* and *E. amplifolia* x *tereticornis*) are described.
6.04		
6.05		
6.06		
6.07		
7.01		
7.02	1. Johnson, LAS, Hill, KD (1990) *Eucalyptus amplifolia* . *Telopea* 4:51. 2. Rockwood, DL, et al. (1987) Development of *Eucalyptus amplifolia* for woody biomass production. *Australian Forest Research* 17 (2): 173-178. 3. FAO (1979) Eucalypts for Planting. FAO Forestry Series No. 11. Rome.	1. "Type: Five specimens collected by Naudin from various localities in France and Italy and now housed at P may be regarded as Syntypes (n.v.)." 2. "It has received little attention worldwide, with the few available reports documenting its unsuitability for Uruguay and its success in Libya (FAO 1979)." 3. "Other well-grown eucalypts seen in Libya by Pryor in 1964 were...*E. amplifolia* ".
7.03		No evidence.
7.04	1. Wu, Z, Raven, PH, eds. (1994) Eucalyptus amplifolia. Flora of China. 13: 323-325. Science Press (Beijing) and Missouri Botanical Garden (St. Louis). 2. Brooker, MIH, AV Slee, JR Connors, and SM Duffy (2002) Euclid: Eucalypts of Southern Australia (http://www.anbg.gov.au/cpbr/cd-keys/Euclid/sample/html/AMP_AMP.htm). 3. Williams, JE and JCZ Woinarski, eds (1997) Eucalypt Ecology: Individuals to Ecosystems. Cambridge University Press, Cambridge, UK. REASSESSMENT: 4.Potts, B. 1990. The response of eucalypt populations to a changing environment. *Tasforests* , December: 179-193. 5. Cremer, K.W. 1977. Distance of seed dispersal in Eucalypts estimated from seed weights. Australian Forest Research, 7(4): 225-228. 6. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In: D. Simberloff & M. Rejmánek, eds. Encyclopedia of Biological Invasions. Berkeley: University of California Press.	1. No adaptions for wind dispersal (i.e., lacks wings). Fruit is dry and oval. 2. Seed dispersal in most eucalypt species is mainly by wind and gravity. 3. Wind is probably the only important agent of seed dispersal in the eucalypts, except possibly in species growing on river margins or flood plains where water could also transport the seed. 4. Relatively limited seed dispersal; planted eucalypts are very small and have no adaptions for dispersal (wings or fleshy). The passive release of seeds is undoubtedly aided by wind; however all rigorous studies of eucalypt seed dispersal and seedling spatial distribution show that in general seeds are dispersed over quite short distances that are in agreement with measurement of terminal descent velocity.

7.05	REASSESSMENT: 1. The Royal Botanic Gardens and Domain Trust (2 April 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. 2. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). *In* : D. Simberloff & M. Rejmánek, eds. *Encyclopedia of Biological Invasions* . Berkeley: University of California Press. 3. Cremer, K.W. 1977. Distance of seed dispersal in Eucalypts estimated from seed weights. *Australian Forest Research* , 7(4): 225-228.	REASSESSMENT: 1. Locally dominant, in grassy woodland on deeper, loamy soils, usually on low sites or along watercourses. 2. 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. 3. Wind is probably the only important agent of seed dispersal in the eucalypts, except possibly in species growing on river margins or flood plains where water could also transport the seed.
7.06	REASSESSMENT: 1. Southern, S.G. et al. 2004. Review of gene movement by bats and birds and its potential significance for eucalypt plantation forestry. *Australian Forestry* , 67(1): 44-53.	REASSESSMENT: 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. Wu, Z, Raven, PH, eds. (1994) *Eucalyptus amplifolia* . Flora of China. 13: 323-325. Science Press (Beijing) and Missouri Botanical Garden (St. Louis). 2. New South Wales Flora Online (http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Eucalyptus~amplifolia. Accessed July 15, 2008.) 3. George, AS, ed. (1980) Flora of Australia. Vol. 19, *Myrtaceae-Eucalyptus* , *Angophora* . Australian Government Publishing Service, Canberra. 4. Brooker, MIH, AV Slee, JR Connors, and SM Duffy (2002) Euclid: Eucalypts of Southern Australia (http://www.anbg.gov.au/cpbr/cd-keys/Euclid/sample/html/AMP_AMP.htm).	1. "Capsule semiglobose to truncate capitate globose, 4-6 x 5-7 mm; disk broad; valves 3-5, strongly exserted from hypanthium. 2. "Fruit globose or ovoid, 4-6 mm long, 5-8 mm diam.; disc raised; valves exserted." 3. "Fruits hemispherical or ovoid, 3-5 mm long, 3-6 mm wide; disc broad, ascending; valves 3-5, strongly exserted." 4. "Seed dark brown, black or grey, 0.7-1.5 mm long, pyramidal or cuboid, dorsal surface pitted, hilum terminal." [No evidence of adaptations to external dispersal]
7.08	REASSESSMENT: 1. Southern, S.G. et al. 2004. Review of gene movement by bats and birds and its potential significance for eucalypt plantation forestry. *Australian Forestry* , 67(1): 44-53.	REASSESSMENT: 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. Williams, JE and JCZ Woinarski, eds (1997) Eucalypt Ecology: Individuals to Ecosystems. Cambridge University Press, Cambridge, UK. 2. Water for a Healthy Country. Taxon Attribute Profiles: Eucalyptus camaldulensis Dehnh. (http://www.csiro.au/files/files/pbsl.pdf). REASSESSMENT: 3. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. *Encyclopedia of Biological Invasions* . Berkeley: University of California Press.	1. "there is no dormancy barrier to the germination of eucalypt seed" 2. "Eucalyptus species store little or none of their seed in the soil." REASSESSMENT: 3. Eucalypt seeds do not have dormancy and seed storage in the soil lasts less than a year.
8.03	REASSESSMENT: 1. Rejmánek, M. & D.M. Richardson. 2011. Eucalypts (203-209). In D. Simberloff & M. Rejmánek, eds. *Encyclopedia of Biological Invasions* . Berkeley: University of California Press.	REASSESSMENT: 1. Triclopyr or glyphosate applied to freshly cut stumps can greatly reduce resprouting.
8.04	1. Rockwood, DL, et al. (1987) Development of *Eucalyptus amplifolia* for woody biomass production. Australian Forest Research 17 (2): 173-178. 2. Rockwood, DL, et al. (1991) Genetic improvement of *Eucalyptus amplifolia* for frost-frequent areas. Australian Forestry: The Journal of the Institute of Foresters of Australia 54 (4): 212-218.	1. "Coppicing through four rotations in northern Florida has been vigorous, with annual yields reaching 23 dry t/ha in 2 years." 2. "Superior coppice survival and vigor in northern Florida".
8.05		