

<i>Eucalyptus nitens</i> (Ribbon gum, Shinning 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)	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?	y	
3.01	Naturalized beyond native range	y	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	n	-1
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	n	0
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	n	0
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	n	0
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	n	-1
6.07	Minimum generative time (years)	5	-1

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	?	
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	n	-1
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		0	
Implemented Pacific Second Screening		No	
Risk Assessment Results		Accept	

	Reference	Source data
1.01		Widely cultivated, but no evidence of selection for reduced weediness.
1.02		Skip to 2.01
1.03		Skip to 2.01
2.01	<p>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-GRIN [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?15948 [Accessed: 12/13/2011]). 3. 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 (2.0 [1991]). http://plantnet.rbgsyd.nsw.gov.au. 4. Barbour, R.C. et al. 2003. Gene flow between introduced and native <i>Eucalyptus</i> species: exotic hybrids are establishing in the wild. <i>Australian Journal of Botany</i> , 51(4): 429-439.</p>	<p>No computer analysis was performed. 1. New South Wales, Victoria, and Tasmania, Australia: Global plant hardiness zones 8-10; equivalent to USDA Hardiness zones 8a-10b (north, central, south zones of Florida). 2. Distributional range: native to New South Wales (east) and Victoria (east), Australia. 3. Locally abundant, in wet forest and rainforest margins on fertile soils in cool high-rainfall areas; Point Lookout and Barrington Tops districts and south from the Jingera district. NSW subdivisions: NT, ST. 4. <i>E. nitens</i> is exotic to the island (Tasmania) as it is native only to continental Australia (Pederick 1979).</p>
2.02		No computer analysis was performed. Native range is well known; refer to 2.01 source data.
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. <i>Ecocrop</i> . Copyright 1993-2007. Food and Agriculture Organization of the United Nations. Web. 30 January 2012. http://ecocrop.fao.org/ecocrop/srv/en/home. 3. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedata/bases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1. Native distribution along the northeast coast of New South Wales, Victoria, and Tasmania Australia appears to be in 2 climatic groups (Cfa, Cfb). 2a. Climate zone: subtropical humid (Cf), subtropical dry summer (Cs), subtropical dry winter (Cw), temperate oceanic (Do). 2.b. Shinning gum can in tropical and subtropical regions be found at elevations from 600 to 3500 m. The natural latitudinal range in Australia is 30-38°S. It is mainly found on slopes and mountain tops. 3. Biophysical limits: Altitude: 600 -1600 m (23.6 - 63 in); Mean annual temperature: -5 to 2-21 to 26 deg. C (23 to 35.6 - 69.8 to 78.8 deg. F).</p>
2.04	<p>1. <i>Ecocrop</i> . Copyright 1993-2007. Food and Agriculture Organization of the United Nations. Web. 30 January 2012. http://ecocrop.fao.org/ecocrop/srv/en/home. 2. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedata/bases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1. Optimal annual rainfall: 900 - 1750 mm (35.4 - 69.9 in); Absolute annual rainfall: 750 - 2000 mm (29.5 - 78.7 in). 2. Mean annual rainfall: 750 - 1750 mm (29.5 - 69.9 in).</p>

2.05	<p>1.a-b. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 2. Purnell, R.C. & J.E. Lundquist. 1986. Provenance variation of <i>Eucalyptus nitens</i> on the Eastern Transvaal Highveld in South Africa. <i>South African Forestry Journal</i>, 138(1): 23-31. 3. Barbour, R.C. et al. 2003. Gene flow between introduced and native Eucalyptus species: exotic hybrids are establishing in the wild. <i>Australian Journal of Botany</i>, 51(4): 429-439. 4. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1.a. Forestry Commission Scotland (FCS) is in the process of establishing 6 energy forestry trials that will include <i>Eucalyptus nitens</i>. 1.b. The UK Department of Energy and Climate Change (DECC) are funding Forest Research to test the same species as in the FCS trials and undertake larger scale planting of <i>E. nitens</i> at 6 sites in England. 2. <i>E. nitens</i> was introduced to South Africa in 1926 (Poynton, 1979). 3. <i>E. nitens</i> is exotic to the island (Tasmania) as it is native only to continental Australia (Pederick 1979). 4. Exotic : Argentina, Brazil, Chile, India, New Zealand, South Africa, UK, US, Zimbabwe.</p>
3.01	<p>1. Simberloff, D. and M. Rejmánek, ed. <i>Encyclopedia of Biological Invasions</i>. Berkeley: University of California Press, 2011.</p>	<p>1. Has naturalized in New Zealand but has not been determined if the species is naturalized or is just a casual resident in South Africa where it has been planted extensively.</p>
3.02		<p>No evidence.</p>
3.03		<p>No evidence.</p>
3.04		<p>No evidence.</p>
3.05	<p>1. Holm, L. et al. <i>A Geographical Atlas of World Weeds</i>. John Wiley and Sons, New York. 1979.</p>	<p>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>.</p>
4.01		<p>Species does not possess these described morphological features.</p>

4.02	<p>1. Anonymous. 2009. "Focus on Eucalypts." <i>SAPIA NEWS No. 12</i> . 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: 18 January 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.</p>	<p>1. It is likely that most <i>Eucalypts</i> 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.</p>
4.03		
4.04	<p>1. le Mar, K. & C. McArthur. 2005. Interactions between herbivores, vegetation and eucalypt tree seedlings in a plantation forestry environment. <i>Australian Forestry</i> , 68(4): 281-290. 2. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedata/bases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1. Commercial <i>E. nitens</i> tree seedling damage is attributed to three native species: red-bellied pademelon (<i>Thylogale billardierii</i>), red-necked wallaby (<i>Macropus rufogriseus rufogriseus</i>), common brushtail possum (<i>Trichosurus vulpecula fuliginosus</i>) and to the introduced European rabbit (<i>Oryctolagus cuniculus</i>) (Gilbert 1967; Cremer 1969; Statham 1983; O'Reilly & McArthur 1997; Bulinski & McArthur 2000). 2. The juvenile leaves are unpalatable to the Australian opossums that in New Zealand eat the foliage.</p>

4.05	<p>1. Denholm, Matthew. "Toxic water linked to forestry trees." <i>The Australian</i> . News Limited, 22 February 2010. Web. 31 January 2012. 2. Australia. Parliament of Australia, Authority of the Senate. <u>Rural and Regional Affairs and Transport References Committee</u>. The Senate Committees. 25 February 2010. 31 January 2012. http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22chamber%2Fhansards%2F2010-02-25%2F0050%22.</p>	<p>1. It has been suggested that a toxin caused by <i>Eucalyptus nitens</i> leaves has been found in a Tasmanian river that is used for drinking water. A study conducted by Tasmanian local GP, Dr. Alison Bleaney and Sydney scientist, Dr. Marcus Scammell, found that water samples from George River were toxic to water fleas, oyster larvae, and sea urchins. University of New South Wales environmental toxicologist Christian Khalil said whatever agent was in the water was 100 per cent toxic to human skin, liver and lung cells as well, although the extent of the impact on the entire body is unknown. New Zealand ecotoxicologist Chris Hickey reviewed and repeated the tests using foam from the river, including from a site near the drinking water intake for the town of St Helens. He found the foam toxic to mussel larvae. A Tasmanian government investigation came to the same conclusion but have concluded that it is not an issue since it's naturally occurring. 2. A motion for senate investigation enacted by Senator Bob Brown on the toxicity of the George River in north-east Tasmania with reference to <i>Eucalyptus nitens</i> plantations and its possible impacts of leacheate; impacts on the toxicity to human health and wildlife; previous investigations into the toxicity of George River; breeding and/or genetic modifications of plantation trees; current breeding programs; mitigation measures; any related topics.</p>
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4.06	<p>1. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]). 2. FAO. 2007. Forest Health & Biosecurity Working Papers Overview of Forest Pests – South Africa. Working Paper FBS/30E, FAO, Rome. 31 January 2012. http://www.fao.org/docrep/012/al019e/al019e00.pdf. 3. Hunter, G.C. et al. 2009. <i>Teratosphaeria nubilosa</i>, a serious leaf disease pathogen of Eucalyptus spp. in native and introduced areas. <i>Molecular Plant Pathology</i>, 10(1): 1-14. Abstract. 4. Carnegie, A.J. 2007. Forest health condition in New South Wales, Australia, 1996–2005. II. Fungal damage recorded in eucalypt plantations during forest health surveys and their management. <i>Australasian Plant Pathology</i>, 36(3): 225-239.</p>	<p>1. The juvenile leaves are unpalatable to many pests, in some cases even to the leaf-cutting ant of Brazil. The pests attack the adult leaves. 2. Insects: <i>Coryphodema tristis</i> (cossid moth, goat moth); Diseases: <i>Botryosphaeria dothidea</i> (Botryosphaeria canker). 3. <i>Teratosphaeria nubilosa</i> is a serious leaf disease pathogen of <i>Eucalyptus</i> spp., including <i>E. nitens</i>, in native and introduced areas. 4. <i>Kirramyces eucalypti</i> caused severe leaf damage in Australia (Walker et al 1992) and significant defoliation (>95% severity) of <i>Eucalyptus nitens</i> plantations over several years in Tasmania (Yuan 1999) and New Zealand (Dick 1982; Gadgil & Dick 1983; Hood et al. 2002; Hood & Alexander 2006). <i>Caliciopsis</i> sp. 'pleomorpha' was associated with severe cankers leading to tree mortality in <i>E. nitens</i>. <i>Mycosphaerella cryptica</i> caused significant damage to <i>E. nitens</i>. The root rot pathogens <i>P. cinnamomi</i> and <i>Pythium</i> sp. were associated with mortality on 12 occasions. Affected hosts included <i>E. nitens</i>. Significant damage (tree mortality) was associated with <i>C. eucalypticola</i> in <i>E. nitens</i> growing on low-quality sites in south-eastern NSW, in trees attacked by weevils and buprestid beetles. Similar damage to <i>E. nitens</i> was also observed in eastern Victoria (A. J. Carnegie, pers. obs). This appears to be the first report of this association and damage, and requires further work.</p>
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4.07	<p>1. Denholm, Matthew. "Toxic water linked to forestry trees." <i>The Australian</i> . News Limited, 22 February 2010. Web. 31 January 2012. 2. Australia. Parliament of Australia, Authority of the Senate. <u>Rural and Regional Affairs and Transport References Committee</u>. The Senate Committees. 25 February 2010. 31 January 2012. http://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22chamber%2Fhansards%2F2010-02-25%2F0050%22.</p>	<p>1. It has been suggested that a toxin caused by <i>Eucalyptus nitens</i> leaves has been found in a Tasmanian river that is used for drinking water. A study conducted by Tasmanian local GP, Dr. Alison Bleaney and Sydney scientist, Dr. Marcus Scammell, found that water samples from George River were toxic to water fleas, oyster larvae, and sea urchins. University of New South Wales environmental toxicologist Christian Khalil said whatever agent was in the water was 100 per cent toxic to human skin, liver and lung cells as well, although the extent of the impact on the entire body is unknown. 2. A motion for senate investigation has been enacted by Senator Bob Brown on the toxicity of the George River in north-east Tasmania with reference to <i>Eucalyptus nitens</i> plantations and its possible impacts of leachate; impacts on the toxicity to human health and wildlife; previous investigations into the toxicity of George River; breeding and/or genetic modifications of plantation trees; current breeding programs; mitigation measures; any related topics.</p>
4.08	<p>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. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 3. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]). 4. 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.</p>	<p>1. <i>Eucalypts</i> 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. 3. It is very sensitive to fire and is killed even by light wild fire. 4. Accumulated litter in dense stands of eucalypt stands are extremely flammable.</p>

4.09	1. " <i>Eucalyptus nitens</i> ." <i>horticopia.com</i> . Horticopia, 2011. Web. 13 December 2011. 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. Exposure: partial shade or partial sun to full sun. 2. Shade-tolerant sub-canopy species are not known.
4.10	1. " <i>Eucalyptus nitens</i> ." <i>horticopia.com</i> . Horticopia, 2011. Web. 13 December 2011. 2. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. Will grow in very dry to occasionally wet soil. Suitable soil is well-drained/loamy, sandy or clay. 2. Best development on deep loamy soils over clay; substrates include basalt, granite, schist, shale, and sandstone.
4.11	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 . 2. <i>Ecocrop</i> . Copyright 1993-2007. Food and Agriculture Organization of the United Nations. Web. 30 January 2012. http://ecocrop.fao.org/ecocrop/srv/en/home .	1. Family: <i>Myrtaceae</i> ; tree to 60 m high. 2. Tall evergreen tree reaching 40-70 m or even 90 m in height.
4.12	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. Locally abundant.
5.01	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 . 2. Boland, D.J. et al. <i>Forest Trees of Australia</i> . 5th ed. Collingswood, Victoria, Australia: CSIRO, 2006. Print.	1. In wet forests and rainforest margins. 2. Inhabits high altitude slopes; mountaintops are common.
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 (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 . 2. <i>Ecocrop</i> . Copyright 1993-2007. Food and Agriculture Organization of the United Nations. Web. 30 January 2012. http://ecocrop.fao.org/ecocrop/srv/en/home .	1. Tree to 60 m high. 2. Tall evergreen tree reaching 40-70 m or even 90 m in height.
6.01		
6.02	1. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedata/bases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).	1.a. There are approximately 260,000 viable seeds/kg. 1.b. If sufficient seed is available after fire, the regeneration is prolific, and regrowth develops rapidly on the resulting ash bed.
6.03	1. Barbour, R.C. et al. 2003. Gene flow between introduced and native Eucalyptus species: exotic hybrids are establishing in the wild. <i>Australian Journal of Botany</i> , 51(4): 429-439.	1.a. Hybrids between plantation-grown <i>E. nitens</i> and the native species <i>E. ovata</i> were previously identified in open-pollinated seed from <i>E. ovata</i> (Barbour et al 2002); however, whether these hybrids can establish in the wild was unknown. Presented here is the first evidence that exotic F1 hybrid seedlings, arising from fertilization of native <i>E. ovata</i> by plantation-grown <i>E. nitens</i> pollen, are establishing in the wild. 1.b. Morphological and allozyme analysis has shown that F1 hybridization between plantation and native <i>Eucalyptus</i> is occurring (Barbour et al 2002; present study) and the present study shows that these hybrids are establishing in the wild.
6.04	1. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedata/bases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]). 2. Simberloff, D. and M. Rejmánek, ed. <i>Encyclopedia of Biological Invasions</i> . Berkeley: University of California Press, 2011.	1. A high degree of selfing is suspected. <i>E. nitens</i> is a late and light seed producer. 2. Eucalypt breeding system is of mixed mating with preferential outcrossing.
6.05	1. Barbour, R.C. et al. 2003. Gene flow between introduced and native Eucalyptus species: exotic hybrids are establishing in the wild. <i>Australian Journal of Botany</i> , 51(4): 429-439. 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. Pollinators of <i>E. nitens</i> in Tasmania are small insects; larger insects (bees, bumble bees, etc.) and birds are not known to be active pollinators of this species of eucalypt (Hingston et al. 2002). 2. Eucalypts generally don't need special pollinators. They are pollinated mostly by bees, wasps, and to lesser extents, birds, mammals, and wind.

6.06	<p>1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 2. Simberloff, D. and M. Rejmánek, ed. Encyclopedia of Biological Invasions. Berkeley: University of California Press, 2011.</p>	<p>1. <i>E. nitens</i> does not coppice as most other eucalypts do, and does not have the ability to sucker or colonize new ground by any other vegetative means. 2. Regenerative strategy: stem sprouter.</p>
6.07	<p>Moncur, M.W. & O. Hasan. 1994. Floral induction in <i>Eucalyptus nitens</i>. <i>Tree Physiology</i>, 14(11): 1303-1312.</p>	<p>1. <i>Eucalyptus nitens</i> (Deane & Maiden) takes at least five years to initiate flower buds from seed. 2. Eucalypts begin to set viable seed around age 5.</p>
7.01		
7.02	<p>1. USDA/ARS-GRIN [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?15948 [Accessed: 12/13/2011]). 2. <i>Ecocrop</i>. Copyright 1993-2007. Food and Agriculture Organization of the United Nations. Web. 30 January 2012. http://ecocrop.fao.org/ecocrop/srv/en/home. 3. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1. Economic importance: fiber and wood. 2. Used for for general construction, flooring, joinery, panelling, furniture, essential oils, fuelwood, and pulp for paper. 3. Products: Fuel, fiber, timber, essential oil.</p>
7.03		<p>No evidence of <i>E. nitens</i> occurring (naturally or cultivated) near produce.</p>
7.04	<p>1. Potts, B. 1990. The response of eucalypt populations to a changing environment. <i>Tasforests</i>, December: 179-193. 2. Cremer, K.W. 1977. Distance of seed dispersal in Eucalypts estimated from seed weights. <i>Australian Forest Research</i>, 7(4): 225-228. 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.</p>	<p>No description of seed could be found. 1. Seed dispersal in most eucalypt species is mainly by wind and gravity. 2. 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. 3. Relatively limited seed dispersal; planted eucalypts are very small and have no adaptations 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.</p>

7.05	<p>1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 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.</p>	<p>1. The seed drops directly to the ground from open pods. It has no specific mechanisms for water dispersal, though dry eucalypt seed will float; seeds sink after absorbing water. 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.</p>
7.06	<p>1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 2. 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.</p>	<p>1. The seed drops directly to the ground from open pods. There are no biological vectors for seed movement. 2. 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).</p>
7.07	<p>1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 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.</p>	<p>No adaptations that would suggest that it could attach itself externally to animals. 1. The seed drops directly to the ground from open pods. There are no biological vectors for seed movement. 2. Relatively limited seed dispersal; planted eucalypts are very small and have no adaptations for dispersal (wings or fleshy).</p>
7.08	<p>1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf. 2. 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.</p>	<p>1. The seed drops directly to the ground from open pods. There are no biological vectors for seed movement. 2. 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).</p>
8.01	<p>Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).</p>	<p>1. <i>E. nitens</i> is a light seed producer.</p>

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	1. 1. Anonymous. October 2010. Scotland, Forestry Commission. Interim Guidance on the Grant Aiding and Planting of Eucalypts in Scotland. Accessed: 18 January 2012. http://www.forestry.gov.uk/pdf/InterimEucalyptusGuidance.pdf/\$FILE/InterimEucalyptusGuidance.pdf . 2. Orwa, C.A. et al. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp [http://www.worldagroforestry.org/af/treedb/AFTPDFS/Eucalyptus_urophylla.pdf]).	1. <i>E. nitens</i> does not coppice as most other eucalypts do, and does not have the ability to sucker. 2. <i>E. nitens</i> can be coppiced.
8.05		