Family: Cupressaceae

Taxon: callitris columellaris

Synonym:

Print Date: 1/25/2012

Common Name: white cypress-pine

Murray River cypress-pine northern cypress-pine

Question Status:	naire :	current 20090513 Assessor Approved	Assessor: Data Entry Person	Patti Clifford Patti Clifford	Designation: H WRA Score 9	(HPWRA)
)1 Is tl	he species h	ighly domesticated?			y=-3, n=0	n
02 Has	Has the species become naturalized where grown?			y=1, n=-1		
03 Doe	Does the species have weedy races?			y=1, n=-1		
	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	
)2 Qua	Quality of climate match data			(0-low; 1-intermediate; 2-high) (See Appendix 2)	High	
03 Bro	Broad climate suitability (environmental versatility)			y=1, n=0	y	
04 Nat	tive or natu	ralized in regions with tropic	eal or subtropical climates		y=1, n=0	y
05 Doe	es the specie	es have a history of repeated	introductions outside its na	ntural range?	y=-2, ?=-1, n=0	n
01 Nat	turalized be	yond native range			y = 1*multiplier (see Appendix 2), n= question 205	y
02 Gar	Garden/amenity/disturbance weed			n=0, y = 1*multiplier (see Appendix 2)	n	
03 Agr	ricultural/fo	orestry/horticultural weed			n=0, y = 2*multiplier (see Appendix 2)	y
04 Env	Environmental weed			n=0, y = 2*multiplier (see Appendix 2)	n	
05 Con	Congeneric weed			n=0, y = 1*multiplier (see Appendix 2)	y	
01 Pro	duces spine	es, thorns or burrs			y=1, n=0	n
02 Alle	Allelopathic				y=1, n=0	
03 Par	asitic				y=1, n=0	n
04 Unp	palatable to	grazing animals			y=1, n=-1	n
05 Tox	xic to anima	ıls			y=1, n=0	n
06 Hos	Host for recognized pests and pathogens			y=1, n=0	y	
07 Cau	Causes allergies or is otherwise toxic to humans			y=1, n=0	n	
08 Cre	Creates a fire hazard in natural ecosystems			y=1, n=0	n	
09 Is a	shade tolei	rant plant at some stage of its	s life cycle		y=1, n=0	n
10 Tole	erates a wid	de range of soil conditions (or	r limestone conditions if no	t 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	n
504	Geophyte (herbaceous with underground storage organs bulbs, corn	ns, or tubers) y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 4+ years = -1	0, >3
701	Propagules likely to be dispersed unintentionally (plants growing in he areas)	eavily trafficked y=1, n=-1	
702	Propagules dispersed intentionally by people	y=1, n=-1	n
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	y
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	
801	Prolific seed production (>1000/m2)	y=1, n=-1	
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol ag	gents) y=-1, n=1	
	I	Designation: H(HPWRA) WRA Score	9

upporting Data:				
101	2012. WRA Specialist. Personal Communication.	the species highly domesticated? No] No evidence of domestication that duces invasive traits.		
102	2012. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown? NA]		
103	2012. WRA Specialist. Personal Communication.	[Does the species have weedy races? NA]		
201	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? 2 High] Native range: Australia - Ashmore and Cartier, Austr. Capital Terr., New South Wales, Northern Territory, Queensland, South Australia, Victoria, Western Australia.		
202	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data? 2 High] Native range: Australia - Ashmore and Cartier, Austr. Capital Terr., New South Wales, Northern Territory, Queensland, South Australia, Victoria, Western Australia.		
203	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Broad climate suitability (environmental versatility)? Yes] Callitris columellaris has a wided geographic distribution across Australia reflecting its drought tolerance. The 90 sampled C. columellaris sites spanned extremely wide ranges of mean annual temperature (14.1–28.4 °C), mean annual rainfall (168–2117mm) and rainfall seasonality index (0.09–1.04). Thirty-four were classed as tropical, 36 as arid, and 20 as temperate.		
204	2008. The Bishop Museum. Native and naturalized flowering plants of Hawaii - main Hawaiian Islands. The Bishop Museum, http://www.bishopmuseum.org/research/natsci/botany/dbandkeys/Main%20Islands%20Report.pdf	[Native or naturalized in regions with tropical or subtropical climates? Yes] Naturalized on Maui.		
204	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: Australia - Ashmore and Cartier, Austr. Capital Terr., New South Wales, Northern Territory, Queensland, South Australia, Victoria, Western Australia.		
205	2012. WRA Specialist. Personal Communication.	[Does the species have a history of repeated introductions outside its natural range? No] No evidence.		
301	2008. The Bishop Museum. Native and naturalized flowering plants of Hawaii - main Hawaiian Islands. The Bishop Museum, http://www.bishopmuseum.org/research/natsci/botany/dbandkeys/Main%20Islands%20Report.pdf	[Naturalized beyond native range? Yes] Naturalized on Maui.		
302	2007. Randall, R.P Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence.		
303	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Agricultural/forestry/horticultural weed? Yes] In the absence of fire, Callitris columellaris can reproduce rapidly, and it is classed as an invasive native species in some agricultural areas.		
304	2012. WRA Specialist. Personal Communication.	[Environmental weed? No] No evidence.		
305	2012. Queensland Government. Weeds of Australia Oyster Bay cypress pine Callitris rhomboidea. Queensland Government, http://keyserver.lucidcentral.org/weeds/data/0303 0800-0b07-490a-8d04-0605030c0f01/media/Html/Callitris_rhomboidea.htm	[Congeneric weed? Yes Callitris rhomboidea is an environmental weed in Australia in areas that it is growing out of its native range.		
401	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae &sn_gen=callitris&sn_sp=	[Produces spines, thorns or burrs? No] "Erect, columnar tree to 30 m tall. Branches erect or fastigiate. Leaves 1–3 mm long on ultimate branchlets, dark green; dorsal surface rounded.:		
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]		

403	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae&sn_gen=callitris&sn_sp=	[Parasitic? No] Cupressaceae.
404	1990. Clayton-Greene, K.A./Ashton, D.H The dynamics of Callitris columellaris/Eucalyptus albens communities along the Snowy River and its tributaries in South-eastern Australia. Australian Journal of Botany. 38: 403-432.	[Unpalatable to grazing animals? No] Rabbits browse on Callitris columellaris.
404	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Unpalatable to grazing animals? No] Seedlings are vulnerable to grazing animals, especially goats, sheep and rabbits.
405	2012. National Center for Biotechnology Information. PubMed. http://www.ncbi.nlm.nih.gov/sites/entrez	[Toxic to animals? No] No evidence.
405	2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Toxic to animals? No] No evidence.
406	2003. Ciesla, W.M Cinara cupressivora - Pest reports - EXFOR database. http://spfnic.fs.fed.us/exfor/data/pestreports.cfm? pestidval=161&langdisplay=english	[Host for recognized pests and pathogens? Yes] Callitris columellaris is a host for Cinara cupressivora.
407	2012. National Center for Biotechnology Information. PubMed. http://www.ncbi.nlm.nih.gov/sites/entrez	[Causes allergies or is otherwise toxic to humans? No] No evidence.
407	2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence.
408	2012. Plants for a Future Database. Calltris columellaris. http://www.pfaf.org/user/Plant.aspx?LatinName=Callitris+columellaris	[Creates a fire hazard in natural ecosystems? No] The plants are highly inflammable and are usually killed by forest fires. However, they store their seeds in unopened cones on the tree for many years, these seeds are released after a fire and then germinate freely
409	2012. Plants for a Future Database. Calltris columellaris. http://www.pfaf.org/user/Plant.aspx?LatinName=Callitris+columellaris	[Is a shade tolerant plant at some stage of its life cycle? No] Not shade tolerant.
410	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] "Soils ranged from very acidic (pH 3.7) to alkaline (pH 8.3) (Table 1). Soil carbon content was generally low (average 1.4–2.8% in the three climate zones), as were soil N (0.09–0.10%) and soil P (0.011–0.018%). Soil pH tended to be lowest in the tropics, while soil percent C, N and P were generally higher in the temperate zone than in the tropics or the arid zone."
410	2012. Plants for a Future Database. Calltris columellaris. http://www.pfaf.org/user/Plant.aspx?LatinName=Callitris+columellaris	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. and can grow in very alkaline and saline soils.
411	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae&sn_gen=callitris&sn_sp=	[Climbing or smothering growth habit ? No]"Erect, columnar tree to 30 m tall. Branches erect or fastigiate. Leaves 1–3 mm long on ultimate branchlets, dark green; dorsal surface rounded.:

412	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Forms dense thickets> Yes] "In the temperate zone, there were relatively large numbers of small C. columellaris trees, suggestive of abundant recent recruitment. Most individual populations in this zone displayed negative exponential distributions, although the propensity of C. columellaris to form dense, 'locked-in' stands with very slow growth rates complicates interpretation of stand structures in this zone. Dense regeneration was common: 8 of our 20 study sites contained >1000 saplings ha-1."
501	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae &sn_gen=callitris&sn_sp=	[Aquatic? No] "Erect, columnar tree to 30 m tall. Branches erect or fastigiate. Leaves 1–3 mm long on ultimate branchlets, dark green; dorsal surface rounded.:
502	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae &sn_gen=callitris&sn_sp=	{Grass? No] Cupressaceae.
503	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae &sn_gen=callitris&sn_sp=	[Nitrogen fixing woody plant? No] Cupressaceae.
504	1998. Hill, K.D Callitris columellaris Flora of Australia Online. CSIRO Publishing, http://www.anbg.gov.au/abrs/online-resources/flora/stddisplay.xsql?sn_infspnm=columellaris&sn_infsprnk=sp.&sn_fam=cupressaceae &sn_gen=callitris&sn_sp=	[Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)? No] Tree.
601	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Evidence of substantial reproductive failure in native habitat? Yes] Frequent fires have resulted in a decline in abundance or extirpation in some areas. Callitris columellaris is also in decline in much of the drier part of the continent, where seedling establishment is precarious, occurring only during unusually wet periods, and where browsing by introduced sheep, goats and rabbits has imposed additional seedling mortality on what are often small, isolated populations.
602	1990. Clayton-Greene, K.A./Ashton, D.H The dynamics of Callitris columellaris/Eucalyptus albens communities along the Snowy River and its tributaries in South-eastern Australia. Australian Journal of Botany. 38: 403-432.	[Produces viable seed? Yes] In this study, viability of Callitris columellaris seed was 26%.
602	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Produces viable seed? Yes] Reproduction by seed.
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2012. WRA Specialist. Personal Communication.	[Self-compatible or apomictic? Unknown]
605	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846	[Requires specialist pollinators? No] Cupressaceae [wind-pollinated]
606	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Reproduction by vegetative fragmentation?] Produces suckers.

		[Well controlled by herbicides?] Unknown.
802	2012. Plants for a Future Database. Calltris columellaris. http://www.pfaf.org/user/Plant.aspx?LatinName=Callitris+columellaris	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] The plants are highly inflammable and are usually killed by forest fires. However, they store their seeds in unopened cones on the tree for many years, these seeds are released after a fire and then germinate freely. [tree canopy seed bank]
802	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Evidence that a persistent propagule bank is formed (>1 yr)?] No seed bank.
708	2012. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown]
707	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Propagules dispersed by other animals (externally)? No] Seed is dispersed by wind and water.
706	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Propagules bird dispersed? No] Dispersed by wind and water.
705	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Propagules water dispersed? Yes] Dispersed by wind and water.
704	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846	[Propagules adapted to wind dispersal? Yes] Diispersed by wind and water.
704	1990. Clayton-Greene, K.A./Ashton, D.H The dynamics of Callitris columellaris/Eucalyptus albens communities along the Snowy River and its tributaries in South-eastern Australia. Australian Journal of Botany. 38: 403-432.	[Propagules adapted to wind dispersal? Yes] Diispersed by wind.
703	2012. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence.
702	2012. Ronneby Advanced Trees. Callitris columellaris. http://www.ronnebyadvancedtrees.com.au/callitris-columellaris-sand-cypress-pine.html	[Propagules dispersed intentionally by people? Yes] Ronneby Advanced Trees has Callitris seeds for sale.
702	2012. B & T World Seeds. Callitris columellaris. B & T World Seeds, http://b-and-t-world-seeds.com/carth.asp?species=Callitris%20columellaris&sref=15032	[Propagules dispersed intentionally by people? Yes] B&T world seeds has Callitris seeds for sale.
701	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)?] In the absence of fire, Callitris columellaris can reproduce rapidly, and it is classed as an invasive native species in some agricultural areas. [possibly]
07	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Minimum generative time (years)? 3+] Time to first flowering - 6-8 years.

804	2011. Prior, L.D./McCaw, W.L./Grierson, P.F./Murphy, B.P./Bowman, D.M.J.S Population structures of the widespread Australian conifer Callitris columellaris are a bio-indicator of continental environmental change. Forest Ecology and Management. 262: 252-	[Tolerates, or benefits from, mutilation, cultivation, or fire? No] Seedlings are killed by fire. Fire can also reduce the seed production of remaining trees by up to five years.
804	2012. Florabase. Callitris columellaris. Department of Environment and Conservaton Western Australian Herbarium, http://florabase.dec.wa.gov.au/browse/profile/846 6	[Tolerates, or benefits from, mutilation, cultivation, or fire?] Produces suckers.
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]