

Family: *Convolvulaceae*

Taxon: *Turbina corymbosa*

Synonym: *Convolvulus corymbosus* L. (*basionym*)
Ipomoea burmannii Choisy
Rivea corymbosa (L.) Hallier f.

Common Name: Christmaspops
Christmasvine
snakeplant
ololiuqui

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score	15
101	Is the species highly domesticated?			y=-3, n=0	n
102	Has the species become naturalized where grown?			y=1, n=-1	
103	Does the species have weedy races?			y=1, n=-1	
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			n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed			n=0, y = 2*multiplier (see Appendix 2)	
304	Environmental weed			n=0, y = 2*multiplier (see Appendix 2)	y
305	Congeneric weed			n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs			y=1, n=0	y
402	Allelopathic			y=1, n=0	
403	Parasitic			y=1, n=0	n
404	Unpalatable to grazing animals			y=1, n=-1	
405	Toxic to animals			y=1, n=0	n
406	Host for recognized pests and pathogens			y=1, n=0	
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
409	Is a shade tolerant plant at some stage of its life cycle			y=1, n=0	n
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	y
412	Forms dense thickets	y=1, n=0	n
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, 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	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 = 0, 4+ years = -1	
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	y
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	y
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	
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	y
803	Well controlled by herbicides	y=-1, n=1	
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)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score 15

Supporting Data:

101	2011. WRA Specialist. Personal Communication.	[Is the species highly domesticated?? No] No evidence of domestication that reduces invasiveness.
102	2011. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown?] NA
103	2011. WRA Specialist. Personal Communication.	[Does the species have weedy races?] NA
201	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. 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"? High] Native range: Mexico; Belize; Costa Rica; Guatemala; Honduras; Nicaragua; Panama; Antigua and Barbuda; Barbados; Cuba; Dominican Republic; Guadeloupe; Haiti; Jamaica; Martinique; Montserrat; Puerto Rico; St. Lucia; Venezuela; Colombia; Ecuador; Peru
202	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data? High] Native range: Mexico; Belize; Costa Rica; Guatemala; Honduras; Nicaragua; Panama; Antigua and Barbuda; Barbados; Cuba; Dominican Republic; Guadeloupe; Haiti; Jamaica; Martinique; Montserrat; Puerto Rico; St. Lucia; Venezuela; Colombia; Ecuador; Peru
203	2010. CISRO. Australian tropical rainforest plants [online database] <i>Trubina corymbosa</i> . Commonwealth Scientific and Industrial Research Organisation, http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Turbi	[Broad climate suitability (environmental versatility)? No] Altitudinal range: near sea level to 750 m.
203	2011. Dave's Garden. PlantFiles: <i>Turbina</i> , Christmas vine, <i>Turbina corymbosa</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/53532/	[Broad climate suitability (environmental versatility)? No] Hardiness: USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)
204	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: Mexico; Belize; Costa Rica; Guatemala; Honduras; Nicaragua; Panama; Antigua and Barbuda; Barbados; Cuba; Dominican Republic; Guadeloupe; Haiti; Jamaica; Martinique; Montserrat; Puerto Rico; St. Lucia; Venezuela; Colombia; Ecuador; Peru
205	2010. CISRO. Australian tropical rainforest plants [online database] <i>Trubina corymbosa</i> . Commonwealth Scientific and Industrial Research Organisation, http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Turbi	[Does the species have a history of repeated introductions outside its natural range? Yes] Naturalized in NE Queensland, Australia, Malesia and the Philippines.
301	2010. CISRO. Australian tropical rainforest plants [online database] <i>Trubina corymbosa</i> . Commonwealth Scientific and Industrial Research Organisation, http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Turbi	[Naturalized beyond native range? Yes] Naturalized in Northeast Queensland, Australia and in Malesia and the Philippines.
302	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Garden/amenity/disturbance weed? No] "Christmas vine grows as single plants or matted patches of vines in secondary forest openings, old fields, neglected pastures, road sides, stream banks, and vacant lots. In Florida, it may be found in hammocks and brushy areas." [Scored as an environmental weed.]
303	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Agricultural/forestry/horticultural weed?] No specific recommendations are given for controlling the species when it grows as a weed in agricultural settings. [no mention of impacts]

304	2002. Werren, G.L.. A bioregional perspective of weed invasion of rainforests and associated ecosystems: focus on the wet tropics of north Queensland In: Weeds of rainforests and associated ecosystems. Cooperative Research Centre for Tropical Rainforest	[Environmental weed? Yes] <i>Turbina corymbosa</i> poses a significant environmental threat to the sub-tropical rainforests of south-eastern Queensland and northern new South Wales, Australia
304	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Environmental weed? Yes] <i>Turbina corymbosa</i> is a fast growing vine that smothers native plants preventing regeneration of shrubs and trees.
304	2009. Invasive Species Council Australia. Escaped garden plants as a key threatening process. Invasive Species Council Australia, http://www.invasives.org.au/documents/file/submissions/ISC_submission_garden_KTP_april09B.pdf	[Environmental weed? Yes] "Mabi Forest (Complex Notophyll Vine Forest 5b), critically endangered:59 "Almost 80 weed species, comprising 14% of vascular species recorded, have been recorded in Mabi Forest on the Atherton Tableland." Garden escapees are smothering remnants. The most serious include madeira vine, Dutchman's pipe (<i>Aristolochia elegans</i>), cat's claw vine, turbina vine (<i>Turbina corymbosa</i>) and coral berry (<i>Rivina humilis</i>)."
305	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Congeneric weed? No] No evidence.
401	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Produces spines, thorns or burrs? No] <i>Turbina corymbosa</i> "is a woody vine that may extend 5 m or more laterally and into the crowns of trees and shrubs. Older stems reach about 2.5 cm in diameter. The gray, three sided stems have many lenticels and may be grooved. The young stems are cylindrical and tough. The foliage is concentrated on current year's growth."
402	2011. WRA Specialist. Personal Communication.	[Allelopathic?] Unknown.
403	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Parasitic? No] Convolvulaceae.
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals?] Unknown.
405	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Toxic to animals? No] No evidence of toxicity.
405	2011. 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 of toxicity.
406	2011. WRA Specialist. Personal Communication.	[Host for recognized pests and pathogens?] Unknown.
407	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence.
407	2011. 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	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Creates a fire hazard in natural ecosystems? No] <i>Turbina corymbosa</i> "is a woody vine that may extend 5 m or more laterally and into the crowns of trees and shrubs. Older stems reach about 2.5 cm in diameter. The gray, three sided stems have many lenticels and may be grooved. The young stems are cylindrical and tough. The foliage is concentrated on current year's growth." [doesn't accumulate biomass that would create fire hazard]
409	2011. Dave's Garden. PlantFiles: <i>Turbina</i> , Christmas vine, <i>Turbina corymbosa</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/53532/	[Is a shade tolerant plant at some stage of its life cycle? No] Sun Exposure: Full Sun Sun to Partial Shade Light Shade

409	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Is a shade tolerant plant at some stage of its life cycle? No] It demands full or nearly full sunlight and will not grow under a closed forest canopy.
410	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] "Christmas vine will grow on most well drained soils. It is reported to bloom more profusely on "red" and limey soils."
410	2011. Ho-ti nursery. Growing conditions for tropic and subtropic plants and trees. Ho-ti Nursery, http://www.ho-tinursery.com/	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] :Intermediate subtropical vine, 60-90 degrees fahrenheit, full sun, likes limey soil, lots of water, thick, ropey vine, hardy."
411	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Climbing or smothering growth habit? Yes] A woody vine.
412	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Forms dense thickets? No] Woody vine.
501	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Aquatic? No] Vine. Terrestrial.
502	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Grass? No] Convolvulaceae.
503	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Nitrogen fixing woody plant? No] Convolvulaceae.
504	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)?] "Seedlings of Christmas vine grow slowly at first and develop a strong tap and lateral root system. Leaders of well-established plants may extend 2 m or more per year."
601	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Evidence of substantial reproductive failure in native habitat? No] No evidence.
602	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Produces viable seed? Yes] "Sown in commercial potting mix, 95 percent of the seeds germinated between 33 and 48 days after sowing."
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally?] Unknown.
604	2011. WRA Specialist. Personal Communication.	[Self-compatible or apomictic?] Unknown.
605	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Requires specialist pollinators? No]"The nectar gathered from its flowers makes one of the finest honeys." [bee pollinated]

606	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Reproduction by vegetative fragmentation?]"Well established plants root whenever vines touch the soil."
607	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Minimum generative time (years)?] "Seedlings of Christmas vine grow slowly at first and develop a strong tap and lateral root system."
701	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "Christmas vine grows as single plants or matted patches of vines in secondary forest openings, old fields, neglected pastures, road sides, stream banks, and vacant lots. In Florida, it may be found in hammocks and brushy areas."
702	2010. CISRO. Australian tropical rainforest plants [online database] <i>Trubina corymbosa</i> . Commonwealth Scientific and Industrial Research Organisation, http://keys.trin.org.au:8080/key-server/data/0e0f0504-0103-430d-8004-060d07080d04/media/Html/taxon/Turbi	[Propagules dispersed intentionally by people? Yes] Naturalized in NE Queensland, Malesia and the Philippines. Introduced as an ornamental but also used for its hallucinogenic properties.
702	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Propagules dispersed intentionally by people? Yes] Christmas vine is sometimes grown as an ornamental for the clusters of white, scented flowers it produces during the early winter. The nectar gathered from its flowers makes one of the finest honeys. Extracts from the seeds are used as an analgesic in herbal medicine.
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence.
704	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	Natural seedlings tend to be widely scattered. [Propagules adapted to wind dispersal? Yes] "Besides spreading by wind, water, and lateral vine extension, seeds of the species are now widely sold, exchanged, and grown for the narcotic the seeds contain."
705	2001. Department of Natural Resources and Mines Queensland Government. Weed pocket guide agricultural and environmental weeds far North Queensland. Queensland Government, http://www.wettropics.gov.au/st/rainforest_explore/Resources/Documents/8to9/WeedID	[Propagules water dispersed? Yes] Dried fruits and seeds float.
705	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Propagules water dispersed? Yes] "Christmas vine grows as single plants or matted patches of vines in secondary forest openings, old fields, neglected pastures, road sides, stream banks, and vacant lots. In Florida, it may be found in hammocks and brushy areas." "Besides spreading by wind, water, and lateral vine extension, seeds of the species are now widely sold, exchanged, and grown for the narcotic the seeds contain."
706	1998. Csurhes, S./Edwards, R.. Potential environmental weeds in Australia: Candidate species for preventative control. Biodiversity Group, Environment Australia, Canberra, Australia	[Propagules bird dispersed?] Seeds may be dispersed by birds and water.
707	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Propagules dispersed by other animals (externally)? No] "Besides spreading by wind, water, and lateral vine extension, seeds of the species are now widely sold, exchanged, and grown for the narcotic the seeds contain."
708	2011. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut?] Unknown.
801	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Prolific seed production (>1000/m ²)?] "A collection of fruits from Puerto Rico weighed an average of 0.0389 + 0.0004 g/fruit. Seeds separated from those fruits weighed an average of 0.0265 + 0.0002 g/seed or 38,000 seeds/kg."

802	2001. Department of Natural Resources and Mines Queensland Government. Weed pocket guide agricultural and environmental weeds far North Queensland. Queensland Government, http://www.wettropics.gov.au/st/rainforest_explorer/Resources/Documents/8to9/WeedID	[Evidence that a persistent propagule bank is formed (>1 yr)? Yes] Dried seeds have a high level of dormancy
803	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Well controlled by herbicides?] Specific control measures are not available for this species.
804	2011. Francis, J.K.. <i>Turbina corymbosa</i> . U.S. Department of Agriculture, University of Puerto Rico, http://www.fs.fed.us/global/iitf/pdf/shrubs/Turbina%20corymbosa.pdf	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Seedlings of Christmas vine grow slowly at first and develop a strong tap and lateral root system. Leaders of well-established plants may extend 2 m or more per year. The plants can be pruned back to the woody stems or thinned in the spring after blooming is complete."
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)?] Unknown.