

Family: *Orchidaceae*

Taxon: *Spathoglottis unguiculata*

Synonym: *Spathoglottis unguiculata* Benth. & Hook. f. **Common Name:** Dark Purple Ground Orchid
Limodorum unguiculatum Labill. Clawed Spathoglottis
Spathoglottis deplanchei Rchb.f. Grapette Ground Orchid
Spathoglottis hinziana Krinzl.

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	L
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score	3
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		n
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		n
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)		n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		y
401	Produces spines, thorns or burrs		y=1, n=0		n
402	Allelopathic		y=1, n=0		n
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		n
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		y

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	
411	Climbing or smothering growth habit	y=1, n=0	n
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	y
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
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	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	
704	Propagules adapted to wind dispersal	y=1, n=-1	
705	Propagules water dispersed	y=1, n=-1	
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/m ²)	y=1, n=-1	
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
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 agents)	y=-1, n=1	
Designation: L		WRA Score 3	

Supporting Data:

101	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Is the species highly domesticated? No] No evidence
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Species suited to tropical or subtropical climate(s)? 2-high] "Distribution: New. Caledonia & Vanuatu"
202	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Quality of climate match data? 2-high] "Distribution: New. Caledonia & Vanuatu"
203	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Broad climate suitability (environmental versatility)? No] "Habitat. In meadows or along paths in woods and groves; c. 200 m altitude."
204	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Distribution: New. Caledonia & Vanuatu"
205	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Does the species have a history of repeated introductions outside its natural range? No] "...a more recent introduction to Hawaii that quickly became popular for its ease of cultivation., floriferousness, and compact inflorescences with colored bracts in addition to its flowers."
301	2007. McCormack, G.. Cook Islands Biodiversity Database, Version 2007.2.. Cook Islands Natural Heritage Trust, Rarotonga http://cookislands.bishopmuseum.org	[Naturalized beyond native range? No] "COOK ISLANDS STATUS: Introduced - Recent, Not naturalised; Land, lowlands, gardens"
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
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	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence

305	2010. Ackerman, J.D./Cuevas, A.A./Flores-Saldaña, N.P./Zambrana-Torrelío, C.M.. There goes the neighborhood: Reproductive success of <i>Bletia patula</i> when <i>Spathoglottis plicata</i> moves in. PS 66-14: The 95th ESA Annual Meeting, August 1-6, 2010. ESA, Pittsburg	[Congeneric weed? Yes] "Spathoglottis plicata 6... Background/Question/Methods One of the challenges of invasive species biology is knowing whether or not a naturalized species is invasive before dramatic ecosystem changes occur. In Puerto Rico, the exotic orchid, <i>Spathoglottis plicata</i> , has naturalized and spread rapidly over the last two decades. It is abundant and occupies the same habitat as the native orchid, <i>Bletia patula</i> . The two are hosts to the same native florivorous weevil, <i>Stethobaris polita</i> , a specialist on orchid flowers. We ask whether high population densities of <i>Spathoglottis plicata</i> affect the reproductive success of <i>Bletia patula</i> by elevating the abundance of the weevil. We measured local densities of the orchids where the two species grow together and also where <i>B. patula</i> grows in absence of <i>S. plicata</i> . We measured female reproductive success of <i>Bletia</i> at all sites. We also monitored the abundance of weevils and the extent of floral damage they cause on <i>Bletia patula</i> . In addition, we experimentally tested in vitro whether weevils preferred one species to the other. Finally, we modeled the distribution of both orchid species to predict the extent to which the two species may interact. Results/Conclusions Preliminary data indicate the number of weevils per <i>Bletia</i> inflorescence tends to be higher where <i>S. plicata</i> is also present. These data also show a significantly higher flower and fruit production for <i>B. patula</i> where <i>S. plicata</i> is absent. The weevil choice experiments show that the beetles do not prefer flowers of one species to the other. The current distribution of the native <i>Bletia patula</i> is almost completely limited to the northern karst region of Puerto Rico whereas the naturalized <i>S. plicata</i> has established in nearly all moist to wet habitats of the island with a high frequency of populations in the same region as <i>B. patula</i> . The <i>Spathoglottis</i> is expected to occur wherever <i>B. patula</i> exists. Our data thus far suggest that <i>Spathoglottis plicata</i> is an invasive species. It negatively affects the reproductive success of the native orchid, <i>Bletia patula</i> , through an elevation in the frequency and abundance of the florivorous weevil." [impacts native orchid's reproductive success]
305	2010. Kew.org. Big words, simple meanings...Invasive Plants. http://www.kew.org/science/directory/projects/annex/montserrat_invasives.pdf	[Congeneric weed? Yes] "Spathoglottis plicata is an alien orchid that is invading Montserrat native habitats. It is originally from Southeast Asia. Monitoring this plant is essential to understand its impacts on native species."
401	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Produces spines, thorns or burrs? No] "A terrestrial plant, Pseudobulbs ovoid, 4-6 cm tall, c. 25--3 cm diam. At the base. Leaves lanceolate, plicate, acuminate, 40-60 x 2-2"5 cm, attenuate below into a petiole. Scape with four sheaths at intervals. Inflorescence with 10 or more flowers; bracts broadly ovate, c. 1[7 x 1"1 cm. Flowers rose to dark purple, hairy on outer surface of sepals..."
402	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Allelopathic? No] No evidence
402	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Allelopathic? No] No evidence
403	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Parasitic? No] Orchidaceae
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2000. Scott, S./Thomas, C.. Poisonous plants of paradise: first aid and medical treatment of injuries from Hawaii's plants. University of Hawaii Press, Honolulu, HI	[Toxic to animals? No] No evidence
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No] No evidence
406	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Host for recognized pests and pathogens? No] No evidence
406	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Host for recognized pests and pathogens? No] No evidence

407	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No] No evidence
408	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Creates a fire hazard in natural ecosystems? Probably not] No evidence
408	2011. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems? Probably not] No evidence that species, or related taxa, are highly flammable, form dense thickets, or increase fire hazards in natural ecosystems
409	2005. Yok, Tan Puay/Sia, A. (eds.). A Selection of Plants for Green Roofs in Singapore. National Parks Board, Singapore	[Is a shade tolerant plant at some stage of its life cycle? Yes] "This plant grows well in full-sun to partial shade, though it tends to flower more under brighter condition."
409	2011. Plant-Care.com. <i>Spathoglottis unguiculata</i> Pinkette. http://www.plant-care.com/spathoglottis-pinkette-i809.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] " <i>Spathoglottis unguiculata</i> 'Pinkette' is a pink color mutation of the popular 'Grapette' variety...Like 'Grapette', 'Pinkette' is equally well suited for partially shaded landscapes in Zones 10 – 11 or as a warm season containerized patio plant."
410	2010. Medical Answers. <i>Spathoglottis</i> . http://www.medical-answers.org/hd/index.php?t=Spathoglottis	[Tolerates a wide range of soil conditions? Unknown] "They need sun for part of the day, well-drained loamy soil and regular water."
411	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Climbing or smothering growth habit? No] "A terrestrial plant, Pseudobulbs ovoid, 4-6 cm tall, c. 25--3 cm diam. At the base."
412	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Forms dense thickets? No] "In meadows or along paths in woods and groves; c. 200 m altitude." [No evidence]
412	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Forms dense thickets? No] No evidence
412	2011. Nouvelle-Caledonie. Orchids of New Caledonia. http://www.nouvellecaledonietourisme-sud.com/en/discover-new-caledonia/zoom/781-les-orchidees-caledoniennes-primees-a-lexposition-universelle-dosaka-en-1990	[Forms dense thickets? No evidence] "This is a land species. Its flowers are pink or dark purple and open one by one (2 to 3cm diameter). It has been found in the north-east of the mainland, on the Loyalty Islands and on the Isle of Pines. It grows in the prairies or savannahs, often amongst ferns."
501	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Aquatic? No] "A terrestrial plant"
502	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Grass? No] Orchidaceae
503	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Nitrogen fixing woody plant? No] Orchidaceae
504	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "A terrestrial plant, Pseudobulbs ovoid, 4 6 cm tall, c. 25--3 cm diam. at the base."
504	1998. Hew, C.S./Koh, K.T./Khoo, G.H.. Pattern of photoassimilate partitioning in pseudobulbous and rhizomatous terrestrial orchids. Environmental and Experimental Botany. 40: 93–104.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? Yes] "For <i>S. unguiculata</i> , the pseudobulb serves as a major store receiving about one third of the total 14C assimilated ... In the other terrestrial orchid, <i>S. unguiculata</i> , the pseudobulb acts as a powerful storage organ as reported for the epiphytic orchids."
601	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Evidence of substantial reproductive failure in native habitat? No] "Fruit cylindrical, 3 cm long, hairy on the ridges, with a 2 cm long hairy stalk." [No evidence, although no description of seeds given]

602	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Produces viable seed? Unknown] "Fruit cylindric, 3 cm long, hairy on the ridges, with a 2 cm long hairy stalk." [presumably produces seeds in native range, but no description given in literature or plant propagation websites]
603	2009. Kull, T./Arditti, J./Wong, S.M.. <i>Orchid Biology: Reviews and Perspectives</i> , Volume 10. Springer, New York, NY	[Hybridizes naturally? Unknown] <i>Spathoglottis</i> hybrids have been produced artificially, but no evidence of natural hybridization has been documented.
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2001. Cingel, N.A.. An atlas of orchid pollination: America, Africa, Asia and Australia. CRC Press, Boca Raton, FL	[Self-compatible or apomictic? Unknown] " <i>Spathoglottis plicata</i> is self-pollinating, according to Dressler (1981) and others, through structural modification (1990)." [unknown for <i>S. unguiculata</i>]
604	2007. Ackerman, J.D.. Invasive orchids: weeds we hate to love?. <i>Lankesteriana</i> . 7(1-2): 19-21.	[Self-compatible or apomictic? Unknown] " <i>Spathoglottis plicata</i> ... Breeding system ... Autogamous" [Unknown if this reproductive strategy is a trait shared by <i>S. unguiculata</i> and other members of the genus, or unique to <i>S. plicata</i>]
605	2010. Medical Answers. <i>Spathoglottis</i> . http://www.medical-answers.org/hd/index.php?t=Spathoglottis	[Requires specialist pollinators? Unknown] "There are both insect-pollinated and self pollinating species in the genus. They are evergreen plants with crowded pseudobulbs just below the surface of the ground. The 3 lobed labellum projects forward with an extended midlobe which allows insects to land. "
606	2005. Yok, Tan Puay/Sia, A. (eds.). A Selection of Plants for Green Roofs in Singapore. National Parks Board, Singapore	[Reproduction by vegetative fragmentation? No] "It can be propagated by division." [no evidence of natural spread by vegetative means]
607	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Minimum generative time (years)? Unknown] No description of time to flowering.
701	2011. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally? Unknown] Possible if seeds are produced and disseminated in mud, boots vehicles, etc. but evidence is currently lacking
702	2000. Whistler, W.A.. <i>Tropical Ornamentals: A Guide</i> . Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "Another species frequent in cultivation, <i>Spathoglottis unguiculata</i> (Labillardiere) Reichenbach fil. differs in being shorter and having the yellow callus strongly hairy." [ornamental]
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? Unknown] No evidence, but if seeds are produced, they could easily infest other potted plants in nurseries or landscaping.
704	2003. Partomihardjo, T.. Colonisation of orchids on the Krakatau Islands. <i>Telopea</i> . 10(1): 299-310.	[Propagules adapted to wind dispersal? Yes, if seeds are produced] "On Krakatau, orchids are assumed to have colonised through wind dispersal (anemochorous). Dressler (1981) suggested that most orchid seeds are well suited for wind dispersal." [Assuming seeds of <i>S. unguiculata</i> are produced, they would be adapted for wind dispersal, as is the related <i>S. plicata</i>]
705	2011. WRA Specialist. Personal Communication.	[Propagules water dispersed? Unknown] Seeds, if produced, would likely be adapted for wind-dispersal, but could be dispersed via water as well.
706	1982. Cribb, P.J./Tang, C.Z.. <i>Spathoglottis</i> (Orchidaceae) in Australia and the Pacific Islands. Kew Bulletin. 36(4): 721-729.	[Propagules bird dispersed? No] "Fruit cylindric, 3 cm long, hairy on the ridges, with a 2 cm long hairy stalk." [fruit not adapted for bird dispersal]
707	2011. WRA Specialist. Personal Communication.	[Propagules dispersed by other animals (externally)? Probably not] Whether or not seeds are produced, they are probably adapted to wind dispersal and unlikely to be dispersed externally on animals.
708	2011. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown] Capsules and seeds of <i>Spathoglottis</i> not adapted for animal consumption, and unlikely to be consumed.
801	2011. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m ²)? Unknown] No description of seeds or seed production found.
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown]
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information available on control or efficacy of herbicides on <i>S. unguiculata</i> .
804	2011. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown]
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally? Unknown]