

Taxon: Hoodia currorii	Family: Apocynaceae
Common Name(s): Ghaap hoodia cactus	Synonym(s): Hoodia lugardii N. E. Br. Hoodia macrantha Dinter Scytanthus currorii Hook.

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 29 Apr 2015
WRA Score: -2.0	Designation: L	Rating: Low Risk

Keywords: Succulent, Spiny, Medicinal, Fly-Pollinated, Wind-Dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
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	?
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)	n
401	Produces spines, thorns or burrs	y=1, n=0	y
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	n
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
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		

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets		
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		
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
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	3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m ²)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	y

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	No evidence

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 27 Apr 2015]	" <i>Hoodia currorii</i> is found in Namibia and Angola (subsp. <i>currorii</i>), and in Botswana and southern Zimbabwe (subsp. <i>lugardii</i> (N.E.Br.) Bruyns). "

202	Quality of climate match data	High
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed]	

203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed]	"In Angola <i>Hoodia currorii</i> subsp. <i>currorii</i> is restricted to the very arid parts of the coastal Namib Desert; in Namibia it also occurs in this arid zone and also eastward (up to 250 km from the coast), e.g. in dry, short forest and in dry <i>Acacia</i> scrub vegetation. Subsp. <i>lugardii</i> is found further east than any other <i>Hoodia</i> species, growing on calcareous soil, often forming a shrub around the base of <i>Acacia tortilis</i> (Forssk.) Hayne or <i>Colophospermum mopane</i> (Benth.) J.Léonard." ... "Cultivation is not easy because of the need for hot and dry conditions. Cultivated plants usually die because of a too moist growing medium and a lack of fresh air."
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 14 April	"Most of these species grow in areas of Africa where winters are dry, periods of rainfall are short & the plants adapt by becoming dormant & losing roots. Here in Hawaii winters are the most rainy season, rain occurs frequently throughout the year & periods of prolonged wet soil conditions are encountered. Last summer here was also very wet & wet soil conditions persisted for months. When these plants are dormant they become highly susceptible to bacterial & fungal rot, mites and mite transmitted diseases."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 27 Apr 2015]	" <i>Hoodia currorii</i> is found in Namibia and Angola (subsp. <i>currorii</i>), and in Botswana and southern Zimbabwe (subsp. <i>lugardii</i> (N.E.Br.) Bruyns). "

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	Unknown. Not widely available through on-line sales. Limited cultivation information

301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence
	Wagner, W.L., Herbst, D.R. & Lorence, D.H. 2015. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm . [Accessed]	No evidence

302	Garden/amenity/disturbance weed	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

305	Congeneric weed	n
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	No evidence

401	Produces spines, thorns or burrs	y
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	"Spiny succulent shrub up to 1 m tall, with many erect to spreading, branching stems; stem cylindrical, 4–8 cm in diameter, grey-brown-green, with 11–24 vertical ribs consisting of prominent obtuse tubercles each one tipped with a sharp spine 6–10 mm long."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	Unknown

403	Parasitic	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	"Spiny succulent shrub up to 1 m tall, with many erect to spreading, branching stems..." [No evidence. Apocynaceae]

Qsn #	Question	Answer
404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Palatable to humans & presumably ungulates] "The stems of many other <i>Hoodia</i> species are eaten, although there are differences in flavor (more or less bitter). They form a convenient emergency food and moisture source in harsh arid environments." ... "As a consequence of the general degradation of vast parts of southern Africa through overgrazing by sheep and goats, <i>Hoodia</i> species have practically disappeared in some areas where they were formerly abundant."
	Court, D. 2000. Succulent Flora of Southern Africa. Revised Edition. A.A. Balkema, Rotterdam, Netherlands	[Plants presumably palatable to goats & sheep] "With <i>H. macrantha</i> reduced to synonymy this species becomes the largest <i>Hoodia</i> with the biggest flowers and is spectacular in bloom. The big plants (<i>H. macrantha</i>) occur from Ebony to Usakos in Namibia; they grow to heights of 800 mm inside bushes which protect them from the goats and karakul sheep of the region."

405	Toxic to animals	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[No evidence. Non-toxic to humans] "Stems are broken or cut off, rubbed on a stone to remove the spines, cut into strips and these strips are eaten. They have a peculiar pervasively spreading sweet taste which is remarkably persistent and is said to quench thirst and hunger for extended periods. They also make a tasty preserve. Young pods are much sought after for their sweetness. Stems that have swelled after recent rains are preferred. Sometimes they are taken home to be soaked in water before being eaten. It is also said that after eating, an interesting liquorice-like aftertaste remains which gives tobacco smoke a particularly pleasant taste."
	Court, D. 2000. Succulent Flora of Southern Africa. Revised Edition. A.A. Balkema, Rotterdam, Netherlands	[No evidence] "With <i>H. macrantha</i> reduced to synonymy this species becomes the largest <i>Hoodia</i> with the biggest flowers and is spectacular in bloom. The big plants (<i>H. macrantha</i>) occur from Ebony to Usakos in Namibia; they grow to heights of 800 mm inside bushes which protect them from the goats and karakul sheep of the region."
	WRA Specialist. 2015. Personal Communication	No evidence. Palatable to humans & animals

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 28 April	"Some breaking news applicable to all of the hoodias: I just got pathology reports back from UH identifying the fungus causing black spot disease here in <i>H. pilifera</i> and <i>H. parviflora</i> as an anthraconose <i>Collectotricum</i> spp. This genus of fungi is of worldwide distribution and has been reported as a disease of hoodia in southern Africa where these plants are endemic. It affects many crops, here including mangos."

Qsn #	Question	Answer
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 14 April	[Affected by widespread pests & diseases in the Hawaiian Islands] "When these plants are dormant they become highly susceptible to bacterial and fungal rot, mites and mite transmitted diseases." ... "Approximately 1000 seedlings and cuttings of various Hoodia species (<i>H. juttae</i> , <i>H. gordonii</i> , <i>H. macrantha</i> , <i>H. parviflora</i> and <i>H. pilifera</i>) and <i>Hoodiopsis triebneri</i> have been grown in containers outdoors or planted directly in the ground for field trials at our site in Naalehu over the past three years. Virtually all of these have contracted black spot disease, a syndrome that apparently results from infestations with the false spider mite <i>Brevipalpus phoenicis</i> during wet weather conditions. The mite is present throughout Hawaii and has many host species. The permanent black lesions and scarring characteristic of the disease may result from the bite of the mite or a self limiting anthraconose fungus infection transmitted by the mites. This is still under investigation. Black spot disease weakens the plants and severely stunts growth of the affected shoots. If mite infestations are untreated the disease usually kills the plants. All species in this group except <i>Caralluma</i> and some <i>Orbea</i> spp. and <i>Huernia</i> spp. are susceptible to black spot disease. Bacterial soft rot is a devastating disease of this entire group, and also most prevalent during wet weather conditions. It is apparently caused by <i>Erwinia</i> bacteria (taxonomy unsettled) beginning as a root infection and spreading rapidly throughout the vascular system of the plant. Particularly in the swarming phase of growth the bacteria release enzymes that degrade the cell walls and result in the complete liquefaction of the internal tissues and collapse of the plant in 1- 2 days after the infection is first noticed. In <i>Hoodia</i> species the infections usually spread very rapidly and kill the entire plant. In <i>Hoodiopsis</i> infections tend to be walled off in the affected shoots, which may drop off and reroot as new plants."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[No evidence. Edible uses] "Stems are broken or cut off, rubbed on a stone to remove the spines, cut into strips and these strips are eaten. They have a peculiar pervasively spreading sweet taste which is remarkably persistent and is said to quench thirst and hunger for extended periods. They also make a tasty preserve. Young pods are much sought after for their sweetness. Stems that have swelled after recent rains are preferred. Sometimes they are taken home to be soaked in water before being eaten. It is also said that after eating, an interesting liquorice-like aftertaste remains which gives tobacco smoke a particularly pleasant taste."
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes

Qsn #	Question	Answer
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Unlikely due to succulent habit & sparsely vegetated habitat] "Spiny succulent shrub up to 1 m tall, with many erect to spreading, branching stems" ... "In Angola <i>Hoodia currorii</i> subsp. <i>currorii</i> is restricted to the very arid parts of the coastal Namib Desert; in Namibia it also occurs in this arid zone and also eastward (up to 250 km from the coast), e.g. in dry, short forest and in dry Acacia scrub vegetation. Subsp. <i>lugardii</i> is found further east than any other <i>Hoodia</i> species, growing on calcareous soil, often forming a shrub around the base of <i>Acacia tortilis</i> (Forssk.) Hayne or <i>Colophospermum mopane</i> (Benth.) J.Léonard."

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Cactus Art Nursery. 2015. <i>Hoodia macrantha</i> (Syn: <i>Hoodia currorii</i>). http://www.cactus-art.biz/schede/HOODIA/Hoodia_macrantha/Hoodia_macrantha/Hoodia_macrantha.htm . [Accessed 29 Apr 2015]	" In the summer months they will grow well in full sun or partial shade ..."
	Hall, H. 1953. Hoodias. <i>The Cactus and Succulent Journal of Great Britain</i> 15(3): 68-69	[Generic description] "Unlike most of their <i>Stapelia</i> relatives which lurk beneath scrub or rocks, they usually stand out in the open to all the sun and wind and, in places, may be the only living plant for miles."
	WRA Specialist. 2015. Personal Communication	Like other <i>Hoodia</i> species, <i>H. currorii</i> typically grows in open, sparsely vegetated sites but may tolerate light shade

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	"In Angola <i>Hoodia currorii</i> subsp. <i>currorii</i> is restricted to the very arid parts of the coastal Namib Desert; in Namibia it also occurs in this arid zone and also eastward (up to 250 km from the coast), e.g. in dry, short forest and in dry Acacia scrub vegetation. Subsp. <i>lugardii</i> is found further east than any other <i>Hoodia</i> species, growing on calcareous soil, often forming a shrub around the base of <i>Acacia tortilis</i> (Forssk.) Hayne or <i>Colophospermum mopane</i> (Benth.) J.Léonard."
	Cactus Art Nursery. 2015. <i>Hoodia macrantha</i> (Syn: <i>Hoodia currorii</i>). http://www.cactus-art.biz/schede/HOODIA/Hoodia_macrantha/Hoodia_macrantha/Hoodia_macrantha.htm . [Accessed 29 Apr 2015]	"Since roots are quite shallow, a gritty, very free-draining compost with extra perlite or pumiceis suitable, and clay pots help the plants to dry out between watering."

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	"Spiny succulent shrub up to 1 m tall, with many erect to spreading, branching stems; stem cylindrical, 4–8 cm in diameter, grey-brown-green, with 11–24 vertical ribs consisting of prominent obtuse tubercles each one tipped with a sharp spine 6–10 mm long."

412	Forms dense thickets	
	Source(s)	Notes
	Hall, H. 1953. Hoodias. <i>The Cactus and Succulent Journal of Great Britain</i> 15(3): 68-69	[Generic description] "Generally speaking, Hoodias inhabit the hot stony plains and rocky slopes where the rainfall is comparatively low. They are never plentiful, for there are vast miles of the said hot plains without a trace of a Hoodia plant."
	Court, D. 2000. <i>Succulent Flora of Southern Africa</i> . Revised Edition. A.A. Balkema, Rotterdam, Netherlands	[No evidence] "The typical plants have a wide distribution from Elephant's Bay in Angola to south of Walvis Bay in Namibia, in coastal desert only in Angola, but coastal and approaching mopane woodland on higher ground in Namibia."

501	Aquatic	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	[Terrestrial shrub] "In Angola <i>Hoodia currorii</i> subsp. <i>currorii</i> is restricted to the very arid parts of the coastal Namib Desert; in Namibia it also occurs in this arid zone and also eastward (up to 250 km from the coast), e.g. in dry, short forest and in dry Acacia scrub vegetation. Subsp. <i>lugardii</i> is found further east than any other Hoodia species, growing on calcareous soil, often forming a shrub around the base of <i>Acacia tortilis</i> (Forssk.) Hayne or <i>Colophospermum mopane</i> (Benth.) J.Léonard."

502	Grass	n
	Source(s)	Notes
	USDA, ARS, National Genetic Resources Program. 2015. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 28 Apr 2015]	"Family: Apocynaceae subfamily: Asclepiadoideae tribe: Ceropegieae subtribe: Stapelliinae. Also placed in: Asclepiadaceae"

Qsn #	Question	Answer
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, National Genetic Resources Program. 2015. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/ . [Accessed 28 Apr 2015]	"Family: Apocynaceae subfamily: Asclepiadoideae tribe: Ceropegieae subtribe: Stapeliinae. Also placed in: Asclepiadaceae"

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	[No evidence] "Spiny succulent shrub up to 1 m tall, with many erect to spreading, branching stems; stem cylindrical, 4–8 cm in diameter, grey-browngreen, with 11–24 vertical ribs consisting of prominent obtuse tubercles each one tipped with a sharp spine 6–10 mm long."

601	Evidence of substantial reproductive failure in native habitat	
	Source(s)	Notes
	Court, D. 2000. Succulent Flora of Southern Africa. Revised Edition. A.A. Balkema, Rotterdam, Netherlands	"The typical plants have a wide distribution from Elephant's Bay in Angola to south of Walvis Bay in Namibia, in coastal desert only in Angola, but coastal and approaching mopane woodland on higher ground in Namibia."
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Possibly Yes] "As a consequence of the general degradation of vast parts of southern Africa through overgrazing by sheep and goats, <i>Hoodia</i> species have practically disappeared in some areas where they were formerly abundant. All species are now protected by CITES regulations and some species are in danger of extinction." ... " <i>Hoodia currorii</i> and other <i>Hoodia</i> species cannot be recommended as a vegetable from the wild because of the danger of extinction."

602	Produces viable seed	y
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	"Almost all <i>Hoodia</i> species can be propagated by seed and by cuttings taken from the base of a branch."

603	Hybridizes naturally	
	Source(s)	Notes

Qsn #	Question	Answer
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 21 April	[Hybridization suspected among Hoodia species in cultivation] "Container grown plants have bloomed and set viable seeds, apparently hybridizing with <i>H. gordonii</i> or other Hoodia species."
	Oyen, L.P.A., 2013. <i>Hoodia gordonii</i> (Masson) Sweet ex Decne. In: Schmelzer, G.H. & Gurib-Fakim, A. (Editors). Prota 11(2): Medicinal plants/Plantes médicinales 2. PROTA, Wageningen, Netherlands	[Natural hybrids reported in other members of genus] "Natural hybrids have been recorded between <i>Hoodia gordonii</i> and <i>Hoodia flava</i> (N.E.Br.) Plowes. The plants were fertile and backcrosses with the parents successful. Natural intergeneric crosses include: <i>Hoodia gordonii</i> × <i>Orbeopsis lutea</i> (N.E.Br.) L.C.Leach subsp. <i>vaga</i> (N.E.Br.) L.C.Leach and <i>Hoodia gordonii</i> × <i>Stapelia arenosa</i> Luckhoff."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 14 April	"Observations suggest that these Hoodias are selfsterile and that pollination by the same or related species is required."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	"Flowers arising in groups of 1–4 near the apex of the stem, opening successively, bisexual, regular, 5-merous; pedicel 1–6 cm long; sepals ovatelanceolate, 4–8 mm × 3 mm; corolla saucer-shaped, consisting of a short pentagonal tube 3–6 mm × 6–9 mm, and a subcircular to clearly lobed limb 4–18 cm in diameter, outside pale red and glabrous, inside deep red or yellowish-pink and covered with pink to purple hairs 3–4 mm long, lobes broadly ovate, ending in a narrow point up to 2 cm long; corona deep red-purple or red-brown, outer corona forming a cup with bifid lobes, inner corona with linear lobes, incumbent on the backs of the anthers and mostly exceeding them to meet in the centre." ... "Most Hoodia flowers have a foetid, excrement like odour; they produce nectar and pollination is mostly effected by flies."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Hall, H. 1953. Hoodias. <i>The Cactus and Succulent Journal of Great Britain</i> 15(3): 68-69	[Generic description] "It seems an impossible task to propagate them by cuttings, and I have never seen root formation upon branches broken off by animals, etc., and which may have been lying on the soil for a year or more. One would imagine that a plant with 30-40 branches from the base would have a few supplementary roots from some of them, but the root system appears to be confined to the original central stem."
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[No evidence] "Almost all Hoodia species can be propagated by seed and by cuttings taken from the base of a branch."

607	Minimum generative time (years)	3
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Qsn #	Question	Answer
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Flowers in a "few years"] "The primary stem of seedlings of <i>Hoodia currorii</i> grows vertically up from between the cotyledons and after it has reached some size, axillary buds near the base give rise to secondary shoots. After a few years, when the plant is about 20 cm tall, flowering starts near the apex of the main stem and branches. After flowering, vegetative growth continues and in subsequent years new flushes of flowers appear in the higher portion of the stem."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed]	[Unlikely, but possibly if hairs on seeds aid in adherence to clothing, or mud on shoes or equipment] "Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Sustainable Bioresources, LLC. 2015. Certified Nursery Product List. http://hdoa.hawaii.gov/pi/files/2013/01/0482-Sustainable-Bioresources-LLC-15-03-05.pdf . [Accessed 29 Apr 2015]	May be available for limited commercial sale

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	Possibly, but no evidence. Seeds could potentially be blown into other crops, or containers with other plants & be dispersed unintentionally

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 28 Apr 2015]	"Fruit a pair of fusiform, horn-like follicles, each follicle 15–22 cm long, glabrous, pink to green, 10–250-seeded. Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

705	Propagules water dispersed	n
	Source(s)	Notes

Qsn #	Question	Answer
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Unlikely. Although some secondary dispersal by water may be possible, this is a wind-dispersed species of arid habitats] "Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Not fleshy-fruited] "Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Unknown. Adapted for wind dispersal, but hairs could possibly allow seeds to adhere to fur or mud] "Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. <i>Plant Protection Quarterly</i> , 25(2): 56-74	"Answer 'no' where the taxon is unlikely to be eaten by animals or if seeds are not viable following passage through the gut." [Seeds possess adaptations for wind dispersal]

801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Jansen, P.C.M., 2004. <i>Hoodia currorii</i> (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Unknown] "Fruit a pair of fusiform, horn-like follicles, each follicle 15–22 cm long, glabrous, pink to green, 10–250-seeded. Seeds with a tuft of straight, simple hairs (coma) 15–25 mm long."

802	Evidence that a persistent propagule bank is formed (>1 yr)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Kew Royal Botanic Gardens. 2015. Hoodia currorii. http://www.kew.org/science-conservation/millennium-seed-bank/seed-research/hoodia-currorii . [Accessed 29 Apr 2015]	"This species most probably has Orthodox seeds (based on other species in the same family) - dry to 15-20% eRH and store at -20°C, or as cool as possible." ... "The seeds of this species may be Physiologically Dormant (based on members of the same family). If germination is low, overcome dormancy by mimicking the seasonal patterns of the species' native habitat."

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2015. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Jansen, P.C.M., 2004. Hoodia currorii (Hook.) Decne. [Internet] Record from PROTA4U. Grubben, G.J.H. & Denton, O.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. http://www.prota4u.org/search.asp . [Accessed 29 Apr 2015]	[Unknown] "Hoodia currorii and other Hoodia species cannot be recommended as a vegetable from the wild because of the danger of extinction."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y
	Source(s)	Notes
	Rau, E. 2015. President, Sustainable Bioresources, LLC. Personal Communication. 14 April	[Affected by widespread pests & diseases] "Approximately 1000 seedlings and cuttings of various Hoodia species (<i>H. juttae</i> , <i>H. gordonii</i> , <i>H. macrantha</i> , <i>H. parviflora</i> and <i>H. pilifera</i>) and <i>Hoodiopsis triebneri</i> have been grown in containers outdoors or planted directly in the ground for field trials at our site in Naalehu over the past three years. Virtually all of these have contracted black spot disease, a syndrome that apparently results from infestations with the false spider mite <i>Brevipalpus phoenicis</i> during wet weather conditions. The mite is present throughout Hawaii and has many host species. The permanent black lesions and scarring characteristic of the disease may result from the bite of the mite or a self limiting anthraconose fungus infection transmitted by the mites."

Summary of Risk Traits:

High Risk / Undesirable Traits

- Able to grow in regions with tropical climates
- Spiny
- Reproduces by wind-dispersed seeds
- May be able to produce interspecific & intergeneric hybrids
- Limited ecological information may reduce accuracy of risk prediction

Low Risk Traits

- No reports of invasiveness or naturalization, but introduction outside native range may be limited
- Valuable medicinal plant
- Susceptibility to bacterial and fungal rot, mites and mite transmitted diseases may limit ability to escape & spread in the Hawaiian Islands
- Possibly self-incompatible
- Not reported to spread vegetatively