

Taxon: <i>Opuntia pubescens</i>	Family: Cactaceae
Common Name(s): abrojo chile de perro tetencholete velvet bur cactus	Synonym(s): <i>Opuntia depauperata</i> Britton & Rose <i>Platyopuntia dumetorum</i> (A. Berger) <i>Corynopuntia dumetorum</i> (A. Berger) <i>Opuntia dumetorum</i> A. Berge <i>Opuntia infesta</i> (F. Ritter) Iliff <i>Opuntia pumila</i> Rose <i>Platyopuntia infesta</i> F. Ritter <i>Platyopuntia nana</i> (Kunth) F. Ritter

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 12 Jun 2015
WRA Score: 12.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Spiny Cactus, Naturalizing, Disturbance-Adapted, Thicket-Forming, Spreads Vegetatively

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	y
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	y
302	Garden/amenity/disturbance weed		
303	Agricultural/forestry/horticultural weed		
304	Environmental weed		
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
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		

Qsn #	Question	Answer Option	Answer
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		
409	Is a shade tolerant plant at some stage of its life cycle		
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	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, 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		
604	Self-compatible or apomictic		
605	Requires specialist pollinators		
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)		
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		
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	y
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m ²)	y=1, n=-1	n
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)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	No evidence of domestication
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
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	"Native: Argentina; Bolivia, Plurinational States of; Ecuador (Ecuador (mainland)); Guatemala; Mexico (Chiapas, Guanajuato, Guerrero, Hidalgo, Jalisco, Nayarit, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Veracruz); Paraguay; Peru; Venezuela, Bolivarian Republic"
202	Quality of climate match data	High
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Loaiza, C.R., Aguirre, Z.H. & Jadán, O. 2009. Estado del conocimiento de la familia Cactaceae en el Ecuador. Bol. Soc. Latin. Carib. Cact. Suc. 6(3): 11-22	"Apéndice. Distribución de especies según las formaciones de bosque seco del Ecuador continental." [Appendix. Distribution of species as dry forest formations of continental Ecuador. ... <i>Opuntia pubescens</i> distributed from 0 - 2500 m elevation, demonstrating environmental versatility]

Qsn #	Question	Answer
	Dave's Garden. 2015. Abrojo, Chile de Perro, Tetencholete <i>Opuntia pubescens</i> . http://davesgarden.com/guides/pf/go/89573/ . [Accessed 10 Jun 2015]	"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)"
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	[Elevation range exceeds 1000 m, demonstrating some environmental versatility] "This widespread species occurs in Bolivia, Ecuador, Guatemala, Mexico, Peru, Paraguay, and Venezuela, at altitudes from 0 to 2,500 m (Hunt et al. 2006)."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	"This widespread species occurs in Bolivia, Ecuador, Guatemala, Mexico, Peru, Paraguay, and Venezuela, at altitudes from 0 to 2,500 m (Hunt et al. 2006). In Mexico the species is found in the states of Guanajuato, Hidalgo, Jalisco, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sonora, and Tamaulipas (Hernández et al. 2004). Other authors report the species from Chiapas (Breedlove 1987) and Veracruz (Sosa and Gómez-Pompa 1994). It has also been recorded from Guerrero, Nayarit and Sinaloa (Guzmán et al. 2003). In Venezuela, its distribution is patchy and it occurs in the states of Lara, Mérida, and Táchira."

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. <i>South African Journal of Botany</i> , 98, 207-208	[Limited cultivation in South Africa] "Many cacti in the genus <i>Opuntia</i> are notorious invasive species, and <i>Opuntia pubescens</i> (velvet bur cactus) is no exception. It started to spread inside the Pretoria National Botanical Garden (PNBG) and is now targeted for eradication."
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	[Widespread native distribution, but limited information of cultivation outside native range] "This is an abundant and stable species in Mexico, Ecuador, and Peru. In Venezuela, it is scarce and patchily distributed. "

301	Naturalized beyond native range	y
	Source(s)	Notes
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. <i>South African Journal of Botany</i> , 98, 207-208	"Many cacti in the genus <i>Opuntia</i> are notorious invasive species, and <i>Opuntia pubescens</i> (velvet bur cactus) is no exception. It started to spread inside the Pretoria National Botanical Garden (PNBG) and is now targeted for eradication. The purpose of this study is to assess the feasibility of eradication of <i>O. pubescens</i> in the PNBG as this is the only known population in South Africa."

Qsn #	Question	Answer
	Mora, J. R. V. (2009). Contribución al conocimiento de la flora del Alto Palancia (Castellón). <i>Flora Montiberica</i> , 42: 83-85	[<i>Opuntia pestifer</i> Britton & Rose is a synonym of <i>Opuntia pubescens</i>] " <i>Opuntia pestifer</i> Britton & Rose *CASTELLÓN: 30SYK1317, Navajas, casas colgantes, 375 m, 12-VI-2002. Planta ornamental de origen Americano que hemos encontrado naturalizada en los paredones de toba caliza de los alrededores de Navajas. Constituye novedad para la flora de la Comunidad Valenciana y no aparece mencionado en <i>Flora iberica</i> (BERTHET, 1990)." [Translation: Ornamental plant of American origin we found naturalized in the tufa limestone walls surrounding Navajas . It is new to Flora Valencia and not mentioned in <i>Flora Iberica</i>]

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	[Disturbance adapted] "This cactus occurs in dry deciduous forest and dry shrublands. It also grows in disturbed habitats, such as on roadsides and on dry overgrazed mountains (Pin and Simon 2004). " ... "There are no known threats to this species; it is very tolerant of disturbance."

303	Agricultural/forestry/horticultural weed	
	Source(s)	Notes
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. <i>South African Journal of Botany</i> , 98, 207-208	[Predicted impacts to ranching] "The impacts of <i>O. pubescens</i> are not yet known but it is suspected that they will be similar to the notorious jointed cactus (<i>O. aurantiaca</i>) which entails a decrease in the grazing area for livestock; injuries to humans and livestock; loss of vegetation; lowered value of pasture; displacement of indigenous plants and curtailed movement of animals and people in the infested area."

304	Environmental weed	
	Source(s)	Notes
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. <i>South African Journal of Botany</i> , 98, 207-208	[Potential impacts to native vegetation, as yet not manifested] "The impacts of <i>O. pubescens</i> are not yet known but it is suspected that they will be similar to the notorious jointed cactus (<i>O. aurantiaca</i>) which entails a decrease in the grazing area for livestock; injuries to humans and livestock; loss of vegetation; lowered value of pasture; displacement of indigenous plants and curtailed movement of animals and people in the infested area."

Qsn #	Question	Answer
305	Congeneric weed	y
	Source(s)	Notes
	Weber, E. 2003. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"Opuntia ficus-indica" ... "It spreads by seeds and vegetatively by dislodged stem segments that easily root and regenerate new plants. A single stem segment is capable of building up a dense thicket. Seeds are dispersed by animals"
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	Numerous Opuntia species have become naturalized and invasive outside their native ranges

401	Produces spines, thorns or burrs	y
	Source(s)	Notes
	Dave's Garden. 2015. Abrojo, Chile de Perro, Tetencholete Opuntia pubescens. http://davesgarden.com/guides/pf/go/89573/ . [Accessed 10 Jun 2015]	"Danger: Plant has spines or sharp edges; use extreme caution when handling"
	Cindi, D. D. (2015). The feasibility of eradicating Opuntia pubescens (velvet bur cactus) in the Pretoria National Botanical Garden. South African Journal of Botany, 98, 207-208	"Opuntia pubescens is an alien succulent armed with thin barbed thorns and has lemon-yellow flowers."
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"Plants erect and 60-90 cm. high, often much lower, much-branched; joints easily detached, subterete, glabrous or pubescent, 3-7 cm. long; spines numerous, short, brick-brown or buff-brown"

402	Allelopathic	
	Source(s)	Notes
	Rsaissi, N., Bouhache, M., & Bencharki, B. (2013). Allelopathic potential of Barbary fig Opuntia ficus-indica (L.) Mill on the germination and growth of wild jujube Ziziphus lotus (L.) Desf. International Journal of Innovation and Applied Studies, 3(1), 205-214	[Unknown. Allelopathy documented in genus] "Phytoecological observations made in agro ecosystems in the Chaouia region revealed that the tufts of wild jujube "Ziziphus lotus (L.) Desf." enclaved in the hedges of Barbary fig "Opuntia ficus-indica (L.) Mill. " slow their biological activity and their growth and ends by being eliminated completely. The hypothesis that put into play the phenomenon of allelopathy as a mechanism of interference between the two species has been verified in this study. Thus, bioassays were conducted in vitro in the laboratory in order to test the effects of aqueous and hydro-ethanolic extracts of aerial and belowground parts of Barbary fig on seed germination and seedling growth of wild jujube. A dosage of total phenols by Folin-Ciocalteu reagent and a subsequent identification of these phenols compounds have been made. The results showed that these phenols are present in both stems and roots of Barbary fig, with varying concentrations (6.91 to 42.75 mg EAG/g of dry weight) according organ of the plant and the solvent used in the extraction. Very significant inhibitory effects up to 100% were observed on the kinetics and the final rate of jujube seed germination as well as its growth. These results allowed us to infer the existence of a strong correlation between allelopathic effects of Barbary fig on jujube and the concentration of total phenols content in different parts of this species of cactus."

Qsn #	Question	Answer
403	Parasitic	n
	Source(s)	Notes
	Kubitzki, K., Rohwer, J.G. & Bittrich, V. (eds.). 1993. The Families and Genera of Vascular Plants: Volume II. Flowering Plants. Dicotyledons: Magnoliid, Hamamelid and Caryophyllid Families. Springer-Verlag, Berlin, Heidelberg, New York	Cactaceae [No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	Anonymous. 1902. Prickly Pear as Fodder. The Advertiser, Adelaide, Australia, Friday 10 October	[Potentially palatable] "This Mexican variety is named "Opuntia pubescens," and as its name implies, it is soft and downy, and could be eaten by stock without any preparation. It is very succulent, grows readily from cuttings, and would thrive in dry districts."
	All Things Plants. 2015. Abrojo (<i>Opuntia pubescens</i>) in the Prickly Pears (<i>Opuntia</i>) Database. http://allthingsplants.com/plants/view/137193/Abrojo-Opuntia-pubescens/ . [Accessed 10 Jun 2015]	[Spines likely deter browsing] "Resistances: Deer Resistant"
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[Spines would likely deter browsing] "Plants erect and 60-90 cm. high, often much lower, much-branched; joints easily detached, subterete, glabrous or pubescent, 3-7 cm. long; spines numerous, short, brick-brown or buff-brown"

405	Toxic to animals	n
	Source(s)	Notes
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	"There are no known threats to this species; it is very tolerant of disturbance." [Unknown, but populations presumably not currently limited by pests or pathogens]

Qsn #	Question	Answer
407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	All Things Plants. 2015. Abrojo (<i>Opuntia pubescens</i>) in the Prickly Pears (<i>Opuntia</i>) Database. http://allthingsplants.com/plants/view/137193/Abrojo-Opuntia-pubescens/ . [Accessed 10 Jun 2015]	"Edible Parts: Fruit"
	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	
	Source(s)	Notes
	Stafford, K. 2011. Firewise Plant List - Texas. http://txmg.wpengine.netdna-cdn.com/ellis/files/2012/03/Texas-Plant-Flammability-List.pdf . [Accessed 12 Jun 2015]	" <i>Opuntia</i> spp. - Flammability - Firewise rating = Low"
	Hoxey, P. 2011. <i>Opuntioideae</i> of Peru - an overview (part 1). <i>Tephrocactus Study Group</i> 17(4): 47-51, 54-56 and 60	[Fire ecology & flammability unknown. Succulent habit may reduce flammability, but formation of thickets in dry habitats may increase fuel loads in fire prone regions] "The species can form low spreading thickets of cylindrical or slightly flattened stems covered in sharp but barbed spines"

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	Dave's Garden. 2015. Abrojo, Chile de Perro, Tetencholete <i>Opuntia pubescens</i> . http://davesgarden.com/guides/pf/go/89573/ . [Accessed 12 Jun 2015]	"Sun Exposure: Full Sun Sun to Partial Shade"
	A Plant's Home. 2015. <i>Opuntia pubescens</i> (Teen Cactus). http://www.aplantshome.com/plantencyclopedia/plant906e-2.html . [Accessed 12 Jun 2015]	"This genus has the largest membership of sun loving species."
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	[Disturbed habitats are high light environments] "This cactus occurs in dry deciduous forest and dry shrublands. It also grows in disturbed habitats, such as on roadsides and on dry overgrazed mountains (Pin and Simon 2004). "
	Shreve, F. (1937). Lowland vegetation of Sinaloa. <i>Bulletin of the Torrey Botanical Club</i> , 64(9): 605-613	[In open habitats] The low much-branched <i>Opuntia pubescens</i> is found in very open stands of <i>Acacia</i> and is most abundant in the small openings in the northern edge of the thorn-forest."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	Notes
	All Things Plants. 2015. Abrojo (<i>Opuntia pubescens</i>) in the Prickly Pears (<i>Opuntia</i>) Database. http://allthingsplants.com/plants/view/137193/Abrojo-Opuntia-pubescens/ . [Accessed 12 Jun 2015]	"pH Range: 5.5 to 6.5 Soil Range: Some Sand to Clay Loam Water Range: Arid to Semi-Arid"

Qsn #	Question	Answer
	Dave's Garden. 2015. Abrojo, Chile de Perro, Tetencholete <i>Opuntia pubescens</i> . http://davesgarden.com/guides/pf/go/89573/ . [Accessed 10 Jun 2015]	"Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral) 7.6 to 7.8 (mildly alkaline)"
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"Plants erect and 60-90 cm. high, often much lower, much-branched; joints easily detached, subterete, glabrous or pubescent, 3-7 cm. long; spines numerous, short, brick-brown or buff-brown"
412	Forms dense thickets	y
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"In thickets, about 1,350 meters; Baja Verapaz; Huehuetenango. Mexico."
	Hoxey, P. 2011. Opuntioideae of Peru - an overview (part 1). Tephrocactus Study Group 17(4): 47-51, 54-56 and 60	"The species can form low spreading thickets of cylindrical or slightly flattened stems covered in sharp but barbed spines."
501	Aquatic	n
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. < www.iucnredlist.org >	"Systems: Terrestrial"
502	Grass	n
	Source(s)	Notes
	Kubitzki, K., Rohwer, J.G. & Bittrich, V. (eds.). 1993. The Families and Genera of Vascular Plants: Volume II. Flowering Plants. Dicotyledons: Magnoliid, Hamamelid and Caryophyllid Families. Springer-Verlag, Berlin, Heidelberg, New York	Cactaceae
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Kubitzki, K., Rohwer, J.G. & Bittrich, V. (eds.). 1993. The Families and Genera of Vascular Plants: Volume II. Flowering Plants. Dicotyledons: Magnoliid, Hamamelid and Caryophyllid Families. Springer-Verlag, Berlin, Heidelberg, New York	Cactaceae [No evidence]
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n

Qsn #	Question	Answer
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[No evidence] "Plants erect and 60-90 cm. high, often much lower, much-branched; joints easily detached, subterete, glabrous or pubescent, 3-7 cm. long; spines numerous, short, brick-brown or buff-brown;"

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	"This is a very widespread and abundant species that is tolerant to disturbance. Hence, <i>Opuntia pubescens</i> is listed as Least Concern. "

602	Produces viable seed	y
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"fruit small, only 2-2.5 cm. long, red, somewhat spiny; seeds 3 mm. in diameter."
	Dave's Garden. 2015. Abrojo, Chile de Perro, Tetencholete <i>Opuntia pubescens</i> . http://davesgarden.com/guides/pf/go/89573/ . [Accessed 10 Jun 2015]	"Propagation Methods: From woody stem cuttings From softwood cuttings Allow cut surface to callous over before planting From seed; direct sow after last frost Seed Collecting: Allow unblemished fruit to ripen; clean and dry seeds Unblemished fruit must be significantly overripe before harvesting seed; clean and dry seeds Properly cleaned, seed can be successfully stored"
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. South African Journal of Botany, 98, 207-208	[Seeds presumably not produced in South Africa] "The sterile fruit is small (about 2–2.5 cm), green to red, and slightly spiny with a depressed umbilicus."

603	Hybridizes naturally	
	Source(s)	Notes
	Mondragon-Jacobo, C. & Perez-Gonzalez, S. (eds.). 2001. Cactus (<i>Opuntia</i> Spp.) as Forage. FAO, Rome, Italy	"Natural hybridization of <i>Opuntia</i> is common. It is related to polyploidy and appears to be one of the major causes of diversity." [Unknown for <i>O. pubescens</i>]
	Learn 2 Grow. 2015. <i>Opuntia aequatorialis</i> . http://www.learn2grow.com/plants/opuntia-aequatorialis/ . [Accessed 12 Jun 2015]	"Remarkably hardy considering it hails from Ecuador, this medium-sized pricklypear is likely a hybrid of <i>Opuntia pubescens</i> and <i>O. soederstromiana</i> ."

604	Self-compatible or apomictic	

Qsn #	Question	Answer
	Source(s)	Notes
	Mondragon-Jacobo, C. & Perez-Gonzalez, S. (eds.). 2001. Cactus (<i>Opuntia</i> Spp.) as Forage. FAO, Rome, Italy	" <i>Opuntia</i> flowers are also capable of self-pollination, and bagged flowers are able to set fruit (Nerd and Mizrahi, 1994)." [Unknown for <i>O. pubescens</i>]

605	Requires specialist pollinators	
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"flowers lemon-yellow, drying red; filaments greenish; style white, the stigma lobes cream-colored"
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. South African Journal of Botany, 98, 207-208	[Unknown. Sterility may indicate lack of pollination] "The sterile fruit is small (about 2–2.5 cm), green to red, and slightly spiny with a depressed umbilicus."

606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	Britton, N.L. & Rose, J.N. 1919. The Cactaceae: Descriptions and Illustrations of Plants of the Cactus Family, Volume I. The Carnegie Institution of Washington, Washington, D.C.	"Its wide distribution is doubtless due to the fact that the joints, which are covered with barbed spines and are easily detached, fasten themselves to various animals and are scattered like burs over the country; each little joint thus set free starts a new center of distribution."
	Invasive Species South Africa. 2015. New invasive cactus identified in Pretoria. http://www.invasives.org.za . [Accessed 10 Jun 2015]	"The mechanical removal of all plants and plant parts may be the preferred control method as it will cause the least environmental damage to the natural vegetation of the botanical garden however movement of plant parts may exacerbate the spread through vegetative growth of plant parts dropped during removal."
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"The spines are barbed, and thus the joints easily become attached to passing animals or objects and are transported from one locality to another."
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. South African Journal of Botany, 98, 207-208	"The sterile fruit is small (about 2–2.5 cm), green to red, and slightly spiny with a depressed umbilicus. All detached cladodes and fruit when falling to the ground can root and grow to form new plants."

607	Minimum generative time (years)	
	Source(s)	Notes
	Hoxey, P. 2011. Opuntioideae of Peru - an overview (part 1). Tephrocactus Study Group 17(4): 47-51, 54-56 and 60	[Time to reproductive maturity unknown, but ability to spread vegetatively may precede first flowering] "I suspect most propagation is by detached segments rooting down but occasionally the yellow flowers are seen and fruits can develop. I have only observed mature fruits once Vvilich are reddish and quite small 'Nith only two or three seeds inside."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Hoxey, P. 2011. Opuntioideae of Peru - an overview (part 1). <i>Tephrocactus Study Group</i> 17(4): 47-51, 54-56 and 60	"Brushing past the plants invariably detaches a few segments which fix themselves to shoes or clothing."
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	[Common along roads] "This cactus occurs in dry deciduous forest and dry shrublands. It also grows in disturbed habitats, such as on roadsides and on dry overgrazed mountains (Pin and Simon 2004)."
	Standley, P.C. & Williams, L.O. 1962. <i>Flora of Guatemala</i> . Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[Probably Yes] "The spines are barbed, and thus the joints easily become attached to passing animals or objects and are transported from one locality to another."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	"It is used to create fences for dividing lands."

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Britton, N.L. & Rose, J.N. 1919. <i>The Cactaceae: Descriptions and Illustrations of Plants of the Cactus Family</i> , Volume I. The Carnegie Institution of Washington, Washington, D.C.	[Could become unintentionally spread if cultivated] "This is a difficult plant to grow in greenhouses, for the spreading or hanging branches soon become entangled with other plants and break off in attempts to free or move them; partly for this reason, doubtless, it rarely flowers in cultivation."

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. <i>Flora of Guatemala</i> . Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[Fleshy-fruited. No adaptations to wind dispersal] "fruit small, only 2-2.5 cm. long, red, somewhat spiny; seeds 3 mm. in diameter."

705	Propagules water dispersed	n
	Source(s)	Notes
	Arreola, H., Ishiki, M., Terrazas, T., Ostalaza, C. & Loaiza, C. 2013. <i>Opuntia pubescens</i> . The IUCN Red List of Threatened Species. Version 2015.1. <www.iucnredlist.org>	[Unlikely. Fleshy-fruited cactus of arid habitats. Some secondary dispersal by water may occur, but this would probably be an infrequent dispersal vector] "This cactus occurs in dry deciduous forest and dry shrublands. It also grows in disturbed habitats, such as on roadsides and on dry overgrazed mountains (Pin and Simon 2004)."

Qsn #	Question	Answer
706	Propagules bird dispersed	y
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[Fleshy-fruited. Presumably adapted to bird or other vertebrate dispersal] "fruit small, only 2-2.5 cm. long, red, somewhat spiny; seeds 3 mm. in diameter."

707	Propagules dispersed by other animals (externally)	y
	Source(s)	Notes
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. South African Journal of Botany, 98, 207-208	"The plant is relatively small and grows on average to approximately 40 cm high. It is much branched with cladodes (joints) that are easily detached, these are 3–7 cm long. The cladode surface is nearly smooth but mostly velvety or pubescent. The detached cladodes easily attach themselves to passing animals which carry them over distances resulting in the rapid spread of the species."
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	"The spines are barbed, and thus the joints easily become attached to passing animals or objects and are transported from one locality to another."

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1962. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 2. Chicago Natural History Museum	[Presumably yes] "fruit small, only 2-2.5 cm. long, red, somewhat spiny; seeds 3 mm. in diameter."
	van Rheede van Oudtshoorn, K. & van Rooyen, M.W. 1999 Dispersal Biology of Desert Plants. Springer, Berlin, Heidelberg, New York	[Refers to <i>O. robusta</i> and <i>O. streptacantha</i> , but this may also be applicable to the fruit of <i>O. pubescens</i> , if produced] "The fruits of the <i>Opuntia</i> plants can be dispersed by ants, other insects, birds, rodents, carnivores, large herbivores and humans." ... "Opuntia seeds are defecated intact and viable by cattle, horses, goats, deer, carnivores and humans."

Qsn #	Question	Answer
801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Navarro, M.A. 2011. Evaluacion de conservacion de <i>Opuntia decumbens</i> (Cactaceae) en la reserva de la biosfera de Tehuacan-Cuicatlan, México. Universidad Nacional Autónoma de México, Mexico City, Mexico	"En el caso de esta especie y otras de forma de vida similar dentro del género <i>Opuntia</i> su eficiencia reproductiva está dada en gran parte por la reproducción asexual, que es muy común en los ambientes áridos (Mandujano, 1998)." [Translation: In the case of this species and others of similar life forms within the genus <i>Opuntia</i> reproductive efficiency it is given largely by asexual reproduction , which is very common in arid environments (Mandujano , 1998).]
	Hoxey, P. 2011. <i>Opuntioideae</i> of Peru - an overview (part 1). <i>Tephrocactus Study Group</i> 17(4): 47-51, 54-56 and 60	[Fruit production rare] "I suspect most propagation is by detached segments rooting down but occasionally the yellow flowers are seen and fruits can develop. I have only observed mature fruits once which are reddish and quite small with only two or three seeds inside."
	Cindi, D. D. (2015). The feasibility of eradicating <i>Opuntia pubescens</i> (velvet bur cactus) in the Pretoria National Botanical Garden. <i>South African Journal of Botany</i> , 98, 207-208	[Not in South Africa] "The sterile fruit is small (about 2–2.5 cm), green to red, and slightly spiny with a depressed umbilicus."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	All Things Plants. 2015. Abrojo (<i>Opuntia pubescens</i>) in the Prickly Pears (<i>Opuntia</i>) Database. http://allthingsplants.com/plants/view/137193/Abrojo-Opuntia-pubescens/ . [Accessed 10 Jun 2015]	"Other info: Seeds may be extremely slow to germinate"
	Bowers, J. E. (2005). New evidence for persistent or transient seed banks in three Sonoran Desert cacti. <i>The Southwestern Naturalist</i> , 50(4), 482-487	[Unknown for <i>O. pubescens</i>] "Seeds of several <i>Opuntia</i> species persist in the soil for 2 or more years"

803	Well controlled by herbicides	
	Source(s)	Notes
	Invasive Species South Africa. 2015. New invasive cactus identified in Pretoria. http://www.invasives.org.za . [Accessed 10 Jun 2015]	"Chemical control methods are also being investigated as a possible means of eradication. Once the trials are complete, a management plan will be drawn up and contract teams employed to deal with known infestations."
	Parsons, W.T. & Cuthbertson, E.G. 2001. <i>Noxious Weeds of Australia</i> . Second Edition. CSIRO Publishing, Collingwood, Australia	[Generic entry for <i>Opuntia</i> spp.] "Chemical control of <i>Opuntia</i> species is not always effective. Treatments which are or have been recommended in various parts of Australia include: - 2,4,5-T applied in diesel oil, - amitrole T with a wetting agent, - picloram + 2,4,5-T mixtures applied in diesel oil, - MSMA applied in warm weather, - triclopyr as a thorough overall spray, - picloram + triclopyr mixture, and - hexaflurate."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
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Qsn #	Question	Answer
	Source(s)	Notes
	Parsons, W.T. & Cuthbertson, E.G. 2001. Noxious Weeds of Australia. Second Edition. CSIRO Publishing, Collingwood, Australia	[Generic description of <i>Opuntia</i> species] "Physical removal and burning of plants is the most effective method of control but care must be taken to collect and destroy all dislodged segments and fruit. Because of their high moisture content, plants are not easily burnt and combustible material such as wood or old tyres must form the base of the fire. As much of the root system as possible should be removed by grubbing or cultivation."
	Hoxey, P. 2011. Opuntioideae of Peru - an overview (part 1). <i>Tephrocactus Study Group</i> 17(4): 47-51, 54-56 and 60	[Unknown, but mechanical damage may result in dispersal of fragments] "The species can form low spreading thickets of cylindrical or slightly flattened stems covered in sharp but barbed spines (Figs. 6 and 7). Brushing past the plants invariably detaches a few segments which fix themselves to shoes or clothing."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Winston, R.L., Schwarzländer, M., Hinz, H.L., Day, M.D., Cock, M.J.W., Julien, M.H. (eds.). 2014. <i>Biological Control of Weeds: A World Catalogue of Agents and Their Target Weeds</i> , 5th edition. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia	[Species in the genus are regular subjects of biocontrol efforts. There are currently no known biocontrol programs for <i>Opuntia pubescens</i>] "The 2,042 entries in this Fifth Edition span 130 countries and 551 biocontrol agents targeting 224 weeds (when groups such as <i>Opuntia</i> spp. are counted as a single target weed). The most active countries continue to be the USA, Australia, Canada, South Africa and New Zealand."

Summary of Risk Traits:

High Risk / Undesirable Traits

- Broad native distribution & elevation range exceeds 1000 m, demonstrating environmental versatility
- Grows in arid tropical to subtropical climates
- Naturalizing in South Africa and Spain
- A disturbance-adapted cactus able to grow, suggesting a potential to spread into anthropogenic disturbed habitats
- A potential agricultural and environmental weed in South Africa
- Other *Opuntia* species are invasive weeds
- Armed with numerous spines
- Forms thickets within native range
- Reproduces by seeds & vegetatively within native range
- Spines are barbed, and joints easily become attached to passing animals or objects, facilitating dispersal
- Fruits & seeds, when produced, presumably dispersed by frugivorous birds or other vertebrates
- Limited biological and ecological information reduces accuracy of risk prediction

Low Risk Traits

- May be restricted to full sun, or high light environments
- Fruit & seed production may be minimal
- Herbicides may be able to provide effective control, as they have on other *Opuntia* species