Taxon: Brasiliopuntia brasiliensis (Willd.) A. Berger **Family:** Cactaceae

Common Name(s): Brazilian prickly pear **Synonym(s):** Cactus brasiliensis Willd.
Opuntia argentina Griseb.
Opuntia brasiliensis (Willd.) Haw.

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 6 May 2022

WRA Score: 7.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Tropical Cactus, Naturalized, Spiny, Shade-Tolerant, Zoochorous

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	y
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	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed		
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		
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	y=1, n=0	y

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y
411	Climbing or smothering growth habit	y=1, n=0	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	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	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	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**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 5 May 2022]	[No evidence of domestication] "This widespread southern Neotropical cactus is found in western Paraíba, eastern and central-southern Pernambuco, Alagoas, Sergipe, northwestern, northern and eastern Bahia, northeastern and central-southern Minas Gerais and Espírito Santo (Brazil); in semi-humid forests of extra-Amazonian Brazil; in the Atlantic drainage eastwards of the Andes (Peru - only in Cuzco -, Bolivia, northern Argentina, Paraguay). It has become naturalized in some areas where it has been introduced, such as in Florida (USA). It occurs at elevations of 0 to 1,000 m asl."

102	Has the species become naturalized where grown?	
	Source(s)	**Notes**
	WRA Specialist. (2022). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	**Notes**
	WRA Specialist. (2022). 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**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 5 May 2022]	"This widespread southern Neotropical cactus is found in western Paraíba, eastern and central southern Pernambuco, Alagoas, Sergipe, northwestern, northern and eastern Bahia, northeastern and central-southern Minas Gerais and Espírito Santo (Brazil); in semi-humid forests of extra Amazonian Brazil; in the Atlantic drainage eastwards of the Andes (Peru - only in Cuzco -, Bolivia, northern Argentina, Paraguay)."

Qsn #	Question	Answer
202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 5 May 2022]	
	USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 5 May 2022]	"Native Southern America BRAZIL: Brazil [Alagoas, Bahia, Espírito Santo, Minas Gerais, Paraíba, Pernambuco, Rio de Janeiro, Sergipe] WESTERN SOUTH AMERICA: Bolivia (e.), Peru [Ayacucho, Cusco, San Martín] SOUTHERN SOUTH AMERICA: Argentina [Salta], Paraguay"

203	**Broad climate suitability (environmental versatility)**	**n**
	Source(s)	**Notes**
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Hardiness: It is not very frost resistant cactus, hardy to -2° C or less if very dry. However in cultivation it is better not to expose it to temperatures lower than 10° C, even if in an aerated and protected location, in order to avoid the formation of anti-aesthetic spots on the epidermis. In presence of high atmospheric humidity avoid any frost as it is particularly sensitive to root rot. It can handle extremely high temperatures in summer."
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 5 May 2022]	"It occurs at elevations of 0 to 1,000 m asl"

204	**Native or naturalized in regions with tropical or subtropical climates**	**y**
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 6 May 2022]	"Native Southern America BRAZIL: Brazil [Alagoas, Bahia, Espírito Santo, Minas Gerais, Paraíba, Pernambuco, Rio de Janeiro, Sergipe] WESTERN SOUTH AMERICA: Bolivia (e.), Peru [Ayacucho, Cusco, San Martín] SOUTHERN SOUTH AMERICA: Argentina [Salta], Paraguay"

Qsn #	Question	Answer
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	"This widespread southern Neotropical cactus is found in western Paraíba, eastern and central southern Pernambuco, Alagoas, Sergipe, northwestern, northern and eastern Bahia, northeastern and central-southern Minas Gerais and Espírito Santo (Brazil); in semi-humid forests of extra-Amazonian Brazil; in the Atlantic drainage eastwards of the Andes (Peru - only in Cuzco -, Bolivia, northern Argentina, Paraguay). It has become naturalized in some areas where it has been introduced, such as in Florida (USA). It occurs at elevations of 0 to 1,000 m asl."

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	**Notes**
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"Planted and naturalized in Puerto Rico"
	Dave's Garden. (2022). Brasiliopuntia Species, Brazilian Prickly Pear, Prickly Pear Cactus. Brasiliopuntia brasiliensis. https://davesgarden.com/guides/pf/go/63972/. [Accessed 6 May 2022]	"This plant has been said to grow in the following regions: Chandler Heights, Arizona Phoenix, Arizona Tucson, Arizona Carlsbad, California Brooksville, Florida Palm Coast, Florida Mars Hill, North Carolina Andrews, Texas Brady, Texas Mcallen, Texas San Antonio, Texas"

301	Naturalized beyond native range	y
	Source(s)	**Notes**
	ARC-PHP. (2019). Brazilian prickly pear invades KZN. Sapia News 53: 1	"Brazilian prickly pear (Brasiliopuntia brasili-ensis) is indigenous in Brazil, Argentina and several other South American countries. It is naturalised in Florida, USA and has been recorded for the first time as an invader in KwaZulu-Natal at Mziki Pan Game Farm situated between Hluhluwe and Sordwana Bay."
	Guézou, A., Trueman, M., Buddenhagen, C. E., Chamorro, S., Guerrero, A. M., Pozo, P., & Atkinson, R. (2010). An extensive alien plant inventory from the inhabited areas of Galapagos. PLoS One, 5(4), e10276	"Cu) Cultivated (introduced for cultivation, not naturalized"
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	"It has become naturalized in some areas where it has been introduced, such as in Florida (USA)."
	Parker, J. (2016). BIISC Early Detection Botanist. Pers. Comm. 10 May	"Its a tree prickly pear and its naturalizing in Ka'u, a great place for a new cactus to spread. It was fruiting when we saw it but the stuff on the ground could easily have been chunks of the plant that had fallen off somehow and just started growing."

Qsn #	Question	Answer
	Ward, D. B. (2009). Keys to the flora of Florida: 23, Opuntia (Cactaceae). Phytologia, 91, 383-393	"Opuntia brasiliensis (Willd.) Haw. Brasiliopuntia brasiliensis (Willd.) Berger Distinctive "polelike trees." Reported by Britton & Rose (1919) who noted, "Dr. Small has found this plant established after planting on shell mounds and waste places in southern Florida"; by Small (1919), to "5 m. tall or more," from "woods, eastern peninsular Florida," specifically from "a shell mound south of Daytona," Volusia Co.; and by Long & Lakela (1972). Small's identification of this distinctive non-native species was probably correct, though no specimen was preserved. But the plants, as well as habitat, are long gone. The photos of Britton & Rose were of Cuban plants."
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"Planted and naturalized in Puerto Rico; a native to South America, from Brazil to Argentina, Peru and Bolivia, naturalized in Florida."

302	Garden/amenity/disturbance weed	
	Source(s)	**Notes**
	ARC-PHP. (2019). Brazilian prickly pear invades KZN. Sapia News 53: 1	"Brazilian prickly pear (Brasiliopuntia brasili-ensis) is indigenous in Brazil, Argentina and several other South American countries. It is naturalised in Florida, USA and has been recorded for the first time as an invader in KwaZulu-Natal at Mziki Pan Game Farm situ-ated between Hluhluwe and Sordwana Bay. Brazilian prickly pear is a tree-like cactus with a cylindrical central stem and horizontal to drooping side stems. The cladodes are slightly shrunken and a bright shiny green in colour. Flowers are yellow and fruits can range from red or orange to yellow or purple. This cactus should be classified as an emerg-ing invasive species. It has the potential to become very invasive and is a prime target for SANBI BID. A suitable and effective control programme must be designed. Thanks to Ian Macdonald and Jane Bertram for raising the weed alert."
	Novoa, A., Le Roux, J. J., Robertson, M. P., Wilson, J. R., & Richardson, D. M. (2015). Introduced and invasive cactus species: a global review. AoB Plants, 7, plu078.	"Supporting information. File 2. List of Cactus species. *: 57species recorded as invasive outside their native range" [Brasiliopuntia brasiliensis included in table]

303	Agricultural/forestry/horticultural weed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Qsn #	Question	Answer
305	**Congeneric weed**	
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence, although formerly classified as Opuntia. Several Opuntia species are invasive

401	Produces spines, thorns or burrs	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.	"Becoming 4 meters high, with a cylindric woody trunk and a small rounded top; old trunk either naked or spiny; branches dimorphic, the lateral ones horizontal, terete; the terminal joints flat and leaf-like, many of these in time dropping off"
	Parker, J. (2016). BIISC Early Detection Botanist. Pers. Comm. 10 May	"just pressing the plant gave me barbs in my fingers for days."
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	"Tree to 10(-20) m, trunk to 35 cm diam., cylindric, with clusters of spines to 9 cm long; pith chambered."
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Warning: It is armed with treacherous spines that are extremely sharp (This is one of the most dangerous of all cactus). Handle it with extreme caution, and keep it away from gangways and areas frequented by children and animals. Spines must be meticulously removed with tweezers."

402	Allelopathic	
	Source(s)	**Notes**
	WRA Specialist. (2022). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	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.	"Becoming 4 meters high, with a cylindric woody trunk and a small rounded top" [Cactaceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	**Notes**
	Plant This. (2022). Brasiliopuntia brasiliensis. http://www.plantthis.com.au. [Accessed 6 May 2022]	"Animals: deer resistant" [Spines probably deter browsing]
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	"The loss of forest habitat due to agricultural expansion - crops and livestock - is affecting this cactus. Furthermore, some subpopulations are affected by urban expansion, and others by quarrying activities. However, none of these threats is considered to have a major impact."

Qsn #	Question	Answer
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	[Used as fodder. Spines may deter browsing & probably need to be removed before feeding to animals] "Its also an important edge plant and the cladodes are used for forage and fodder, and wood has been used in making furniture." ... "Warning: It is armed with treacherous spines that are extremely sharp (This is one of the most dangerous of all cactus). Handle it with extreme caution, and keep it away from gangways and areas frequented by children and animals. Spines must be meticulously removed with tweezers."

405	Toxic to animals	n
	Source(s)	**Notes**
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	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**
	Secuianu, M. (2020). Brasiliopuntia Brasiliensis Guide: How to Grow & Care for “Brazilian Prickly Pear”. GardenBeast. November 18, 2020. https://gardenbeast.com/brasiliopuntia-brasiliensis-guide/. [Accessed 6 May 2022]	"While caring for Brazilian Prickly Pears, take some time to inspect them for pests like scale insects or mealybugs. The infected parts can be treated with neem oil."
	WRA Specialist. (2022). Personal Communication	Unknown

Qsn #	Question	Answer
407	**Causes allergies or is otherwise toxic to humans**	**n**
	Source(s)	**Notes**
	Secuianu, M. (2020). Brasiliopuntia Brasiliensis Guide: How to Grow & Care for "Brazilian Prickly Pear". GardenBeast. November 18, 2020. https://gardenbeast.com/brasiliopuntia-brasiliensis-guide/. [Accessed 6 May 2022]	"There are no toxic effects reported in general, but Brazilian Prickly Pears come armed with lots of sharp spines. Grow them in a location that is not frequented by curious pets and children."
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	[No evidence. Edible & medicinal uses] "Use: It is suitable for "desert" gardens, in association with other xerophytes. Where the open air cultivation is not possible due to the climate, it is to be cultivated in pot in order to shelter it in winter. The fruits are edible. Fruits and cladodes are used in folk medicine."
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	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**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	[Unknown, but probably no. A succulent plant] "This cactus occurs in restinga, drier phases of mata atlântica, agreste, caatinga (especially along temporary water courses), mata de brejo, mata seca (on limestone), mata de galeria and mata do planalto, especially on deep sandy substrates and as a lithophyte (Taylor and Zappi 2004) ."

409	**Is a shade tolerant plant at some stage of its life cycle**	**y**
	Source(s)	**Notes**
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Exposure: Outside full sun or afternoon shade (but adapt to shade too), inside needs bright light, and some direct sun."
	Scarano, F. R., Duarte, H. M., Ribeiro, K. T., Rodrigues, P. J. F. P., Barcellos, E. M. B., Franco, A. C., Brulfert, J., Deleens, E. & Lüttge, U. (2001). Four sites with contrasting environmental stress in southeastern Brazil: relations of species, life form diversity, and geographic distribution to ecophysiological parameters. Botanical Journal of the Linnean Society, 136(4), 345-364	"Figures 5–8. Some of the plant species and life-forms studied. Fig. 5. Juvenile plant of the arboreal cactus Opuntia brasiliensis in the understory of the dry forest." [Occurs in shaded & exposed sites]
	Dave's Garden. (2022). Brasiliopuntia Species, Brazilian Prickly Pear, Prickly Pear Cactus. Brasiliopuntia brasiliensis. https://davesgarden.com/guides/pf/go/63972/. [Accessed 6 May 2022]	"Sun Exposure: Sun to Partial Shade"

Qsn #	Question	Answer
	Mauseth, J. D., Kiesling, R., & Ostolaza, C. (2002). A Cactus Odyssey: Journeys in the Wilds of Bolivia, Peru, and Argentina. Timber Press, Portland, OR	[Grows in forest understory] "Brasiliopuntias flower easily in colors like this nice golden orange and bright lemon yellow. Such bright colors are easily visible to pollinators, although the flowers may occur in forest shade." ... "By having a narrow cylindrical trunk rather than a broad, flat, thick one, a young plant of Brasiliopuntia can grow upward without needing much energy. The thicker and stouter a shoot, the more materials a plant must dedicate to its construction, so the slender trunks of brasiliopuntias allow each plant to reduce its construction costs. Before long, a plant should be tall enough to stick its head above the leaves of the surrounding trees and receive full sunlight. But that takes a plant of Brasiliopuntia years to achieve, and we wonder how it survives until then."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	**Notes**
	Dave's Garden. (2022). Brasiliopuntia Species, Brazilian Prickly Pear, Prickly Pear Cactus. Brasiliopuntia brasiliensis. https://davesgarden.com/guides/pf/go/63972/. [Accessed 6 May 2022]	"Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral) 7.6 to 7.8 (mildly alkaline)"
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Soil: It will grow in any kind of drained soil, and will resist to droughts, but prefer regular waterings. In pot culture use a draining substratum, as it is sensitive to rottenness when in presence of humidity and low temperatures and let the soil dry out between waterings."
	Secuianu, M. (2020). Brasiliopuntia Brasiliensis Guide: How to Grow & Care for “Brazilian Prickly Pear”. GardenBeast. November 18, 2020. https://gardenbeast.com/brasiliopuntia-brasiliensis-guide/. [Accessed 6 May 2022]	"These prickly, not picky cacti can grow in any type of acidic to neutral soil as long as it is well-draining."

411	Climbing or smothering growth habit	n
	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.	"Becoming 4 meters high, with a cylindric woody trunk and a small rounded top"
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Description: Brasiliopuntia brasiliensis (Opuntia brasiliensis) is a tree-like, perennial cactus with a peculiar habit and mode of growth at once distinguish this species. It rises with a perfectly straight erect slender but firm and stiff round trunk to a height to 9 or more metres tall, very gradually tapering to a point furnished all the way up with short mostly horizontal or declining branches bearing bright green branches of flattened, oval, spiny segments."
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	"Tree to 10(-20) m, trunk to 35 cm diam., cylindric, with clusters of spines to 9 cm long; pith chambered."

412	Forms dense thickets	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	ARC-PHP. (2019). Brazilian prickly pear invades KZN. Sapia News 53: 1	[No evidence at time of publication] "This cactus should be classified as an emerging invasive species. It has the potential to become very invasive and is a prime target for SANBI BID. A suitable and effective control programme must be designed. Thanks to Ian Macdonald and Jane Bertram for raising the weed alert." ... "This cactus should be classified as an emerg-ing invasive species. It has the potential to become very invasive and is a prime target for SANBI BID. A suitable and effective control programme must be designed. Thanks to Ian Macdonald and Jane Bertram for raising the weed alert."
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 16 May 2016]	[No evidence] "This widespread southern Neotropical cactus is found in western Paraíba, eastern and central southern Pernambuco, Alagoas, Sergipe, northwestern, northern and eastern Bahia, northeastern and central-southern Minas Gerais and Espírito Santo (Brazil); in semi-humid forests of extra-Amazonian Brazil; in the Atlantic drainage eastwards of the Andes (Peru - only in Cuzco -, Bolivia, northern Argentina, Paraguay). It has become naturalized in some areas where it has been introduced, such as in Florida (USA). It occurs at elevations of 0 to 1,000 m asl."
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	[No evidence] "Widespread southern neotropical element: restinga, drier phases of Mata atlantica, agreste, caatinga, mata de brejo, mata seca (on limestone), mata de galeria and mata do planalto, especially on deep sandy substrates and as a lithophyte, near sea level to c. I 000 m, north-western Paraiba, central-southern and eastern Pemambuco, Alagoas, Sergipe, north-western, northern and eastern Bahia, north-eastern and central-southern Minas Gerais and Espirito Santo (rare to the west of the Chapada Diamantina and Serra do Espinhaco); semi-humid forests of extra-Amazonian Brazil; Atlantic drainage of Andes eastwards (Peru, Bolivia, northern Argentina, Paraguay)."
	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.	No evidence

501	Aquatic	n
	Source(s)	**Notes**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	[Terrestrial] "This cactus occurs in restinga, drier phases of mata atlântica, agreste, caatinga (especially along temporary water courses), mata de brejo, mata seca (on limestone), mata de galeria and mata do planalto, especially on deep sandy substrates and as a lithophyte (Taylor and Zappi 2004) "

Qsn #	Question	Answer
502	**Grass**	**n**
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 6 May 2022]	Family: Cactaceae Subfamily: Opuntioideae Tribe: Opuntieae

503	**Nitrogen fixing woody plant**	**n**
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2022). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 6 May 2022]	Family: Cactaceae Subfamily: Opuntioideae Tribe: Opuntieae

504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**n**
	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.	"Becoming 4 meters high, with a cylindric woody trunk and a small rounded top; old trunk either naked or spiny; branches dimorphic, the lateral ones horizontal, terete; the terminal joints flat and leaf-like, many of these in time dropping off"

601	**Evidence of substantial reproductive failure in native habitat**	**n**
	Source(s)	**Notes**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	"Although much of its habitat, especially the Atlantic Forest and agreste, has been destroyed in Brazil and population declines have been recorded, Brasiliopuntia brasiliensis does occur in some national parks and has a very wide range in the southern Neotropics. It is therefore listed as Least Concern."

602	**Produces viable seed**	**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.	"fruit yellow, globular, 3 to 4 cm. in diameter, with a low or nearly truncate umbilicus, bearing large areoles; seed usually one, very woolly, 10 mm. broad."

Qsn #	Question	Answer
	Rau, E. (2022). President, Sustainable Bioresources, LLC. Personal Communication. 29 April	"Here's some updated observations and photos from the Brazilian prickly pear trees here in Discovery Harbour. he trees currently have many flowers. Fruit forms from a small percentage of these: Cutting open the fruit involves dealing with clumps of glochids that readily penetrate the skin and drop off the fruit during handling. The flesh of the fruit has a pleasant but insipid taste. Each yields what appears to be 1-2 seeds surrounded by dense, tough fibers that are very difficult to remove to expose the seeds. After drying the seeds for about a week I planted them (4). About two weeks later one seedling has already emerged (photo taken today). This indicates that the local population is producing some viable seeds - not good news!"
	Dave's Garden. (2022). Brasiliopuntia Species, Brazilian Prickly Pear, Prickly Pear Cactus. Brasiliopuntia brasiliensis. https://davesgarden.com/guides/pf/go/63972/. [Accessed 6 May 2022]	"Propagation Methods: From woody stem cuttings From softwood cuttings Allow cut surface to callous over before planting From seed; direct sow after last frost"

603	Hybridizes naturally	
	Source(s)	**Notes**
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	Unknown. Hybrids documented in other genera, but no evidence for Brasiliopuntia

604	Self-compatible or apomictic	
	Source(s)	**Notes**
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	"Little is known at the cytological level about the breeding systems of cacti, but circumstantial evidence strongly implies that the majority of Brazilian taxa (as is true of cacti in general) are self-incompatible and outbreeders (cf. Ross 1981)."
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	[Unknown] "Flowers: Middle sized, diurmal, borne all over the plant from the prominent parts of the edges of the terminal joints or from the pericarpels of old flowers, shallowly saucer-shaped, bright lemon yellow to light brown, c. 4-6 cm long and wide, petals yellow, oblong, obtuse; filaments very short; staminodial hairs present between perianth parts and stamens."

605	Requires specialist pollinators	
	Source(s)	**Notes**
	Mauseth, J. D., Kiesling, R., & Ostolaza, C. (2002). A Cactus Odyssey: Journeys in the Wilds of Bolivia, Peru, and Argentina. Timber Press, Portland, OR	"Brasiliopuntias flower easily in colors like this nice golden orange and bright lemon yellow. Such bright colors are easily visible to pollinators, although the flowers may occur in forest shade."
	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.	"flowers 5 to 5.5 cm. long; petals yellow, oblong, obtuse; filaments very short;"

Qsn #	Question	Answer
	Gorelick, R. (2009). Odd Opuntias. Cactus and Succulent Journal, 81(3), 162-162	"The monotypic genus Brasiliopuntia is the sister genus to Tacinga, but not the vegetatively similar North American genus Nopalea. Brasiliopuntia brasiliensis has bee-pollinated, bowl-shaped flowers with yellow or greenish-yellow petals, quite unlike the hummingbird-pollinated flowers of Nopalea and Tacinga."

606	Reproduction by vegetative fragmentation	y
	Source(s)	**Notes**
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"leaflike shoots or cladodes to 15 cm long, 6 cm wide, and 4-6 mm thick, bright to dark green, many of these in time dropping off." ... "Prickly pear pads root easily and grow rapidly when placed in loose, well-draining soil."

607	Minimum generative time (years)	
	Source(s)	**Notes**
	Mauseth, J. D., Kiesling, R., & Ostolaza, C. (2002). A Cactus Odyssey: Journeys in the Wilds of Bolivia, Peru, and Argentina. Timber Press, Portland, OR	[In forest understory, takes years to reach canopy. Probably does not flower until 4+ years] ["By having a narrow cylindrical trunk rather than a broad, flat, thick one, a young plant of Brasiliopuntia can grow upward without needing much energy. The thicker and stouter a shoot, the more materials a plant must dedicate to its construction, so the slender trunks of brasiliopuntias allow each plant to reduce its construction costs. Before long, a plant should be tall enough to stick its head above the leaves of the surrounding trees and receive full sunlight. But that takes a plant of Brasiliopuntia years to achieve, and we wonder how it survives until then."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	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.	[Relatively large seeds, & lacks means of external attachment] "fruit yellow, globular, 3 to 4 cm. in diameter, with a low or nearly truncate umbilicus, bearing large areoles; seed usually one, very woolly, 10 mm. broad."

Qsn #	Question	Answer
702	**Propagules dispersed intentionally by people**	**y**
	Source(s)	**Notes**
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Cultivation and Propagation: Brasiliopuntia brasiliensis (Opuntia brasiliensis) is a a much decorative cactus easily found in cultivation. It is a summer grower species that offers no cultivation difficulties. This cactus can be grown as a tree, and is sometimes grown as an ornamental in gardens, and is occasionally used for hedges."
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	"This species is sometimes grown as an ornamental in gardens, and is occasionally used for hedges."

703	**Propagules likely to disperse as a produce contaminant**	**n**
	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.	[Relatively large seeds] "fruit yellow, globular, 3 to 4 cm. in diameter, with a low or nearly truncate umbilicus, bearing large areoles; seed usually one, very woolly, 10 mm. broad."

704	**Propagules adapted to wind dispersal**	**n**
	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.	[Fleshy fruit] "fruit yellow, globular, 3 to 4 cm. in diameter, with a low or nearly truncate umbilicus, bearing large areoles; seed usually one, very woolly, 10 mm. broad."

705	**Propagules water dispersed**	
	Source(s)	**Notes**
	Taylor, N.P., Machado, M., Zappi, D., Braun, P., Oakley, L., Pin, A. & Ostalaza, C. (2017). Brasiliopuntia brasiliensis. The IUCN Red List of Threatened Species 2017: e.T46517A121439029. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T46517A121439029.en. [Accessed 6 May 2022]	[Fleshy-fruited, but occurs along water courses. Fruit or cladodes may be buoyant & dispersed by water] "This cactus occurs in restinga, drier phases of mata atlântica, agreste, caatinga (especially along temporary water courses)"

Qsn #	Question	Answer
706	**Propagules bird dispersed**	**y**
	Source(s)	**Notes**
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	"Bats, birds, lizards and ants are almost certainly the commonest seed vectors for Brazilian cacti, with non-flying mammals being of lesser significance and linked to species with larger fruits and seeds."
	Silva, M. C. N. A., & Rodal, M. J. N. (2009). Padrões das síndromes de dispersão de plantas em áreas com diferentes graus de pluviosidade, PE, Brasil. Acta Botanica Brasilica, 23(4), 1040-1047	[Zoochorous.] "Tabela 1. Atributos das espécies estudadas nas áreas de Floresta" [Opuntia brasiliensis - Síndrome de dispersão = Zoocoria]

707	**Propagules dispersed by other animals (externally)**	
	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.	[Unknown. It may be possible that fallen cladodes could be externally transported by adhering to animals] "the terminal joints flat and leaf-like, many of these in time dropping off"

708	**Propagules survive passage through the gut**	**y**
	Source(s)	**Notes**
	LLIFLE. (2022). Brasiliopuntia brasiliensis. http://www.llifle.com/Encyclopedia/CACTI/Family/Cactaceae/6150/Brasiliopuntia_brasiliensis. [Accessed 6 May 2022]	"Propagation: Can be propagated by cuttings and seeds (these need to be fermented, to simulate the digestive tract of the natural dispersors). "
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	[Feral pigs could serve as dispersers] "Bats, birds, lizards and ants are almost certainly the commonest seed vectors for Brazilian cacti, with non-flying mammals being of lesser significance and linked to species with larger fruits and seeds. The most interesting amongst the latter vectors is that suggested by the behaviour of 3 species of Pereskia (the P. GRANDIFOLIA Group), Brasiliopuntia brasiliensis and Pseudoacanthocereus brasiliensis. In these the fruits seem to ripen only once they have fallen to the ground, turning yellow or reddish and then smelling strongly of pineapple, just like the ripe infructescences of ground-dwelling species of Bromelia, with which they are often associated. Here it is hypothesized that such taxa are (or were formerly) dispersed by peccaries, within whose historic range they are included, and this could explain the wide distribution achieved by Brasiliopuntia,"
	Silva, M. C. N. A., & Rodal, M. J. N. (2009). Padrões das síndromes de dispersão de plantas em áreas com diferentes graus de pluviosidade, PE, Brasil. Acta Botanica Brasilica, 23(4), 1040-1047	[Zoochorous. Presumably Yes.] "Tabela 1. Atributos das espécies estudadas nas áreas de Floresta" [Opuntia brasiliensis - Síndrome de dispersão = Zoocoria]

801	**Prolific seed production (>1000/m2)**	**n**
	Source(s)	**Notes**

Qsn #	Question	Answer
	Peixoto, M. R., Zappi, D. C., Silva, S. R., Costa, G. M., & Aona, L. Y. (2016). Cactus survey at the Floresta Nacional of Contendas do Sincorá, Bahia, Brazil. Bradleya, (34), 38-54	"Fruit indehiscent, globose to ovoid, sometimes pear-shaped, 2–4cm diam., pericarp purple to red or orange-yellow, with areoles covered in glochids, funicular pulp fibrous. Seed 8–10mm long, 1–5 per fruit, aril fibrous, pale brown."
	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.	"seed usually one, very woolly, 10 mm. broad." [Unlikely. Seeds fairly large]
	Taylor, N. P. (2000). Taxonomy and phytogeography of the Cactaceae of eastern Brazil. The Open University, United Kingdom	"The flowers and fruits contain few, large ovules and seeds, resp."

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	Royal Botanic Gardens Kew. (2016) Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/. [Accessed 17 May 2016]	[Unknown for Brasiliopuntia] "Opuntia sp. Orthodox" ... "Storage Behaviour: Orthodox Storage Conditions: 100% viability following drying to mc's in equilibrium with 15% RH and freezing for 1 month at -20°C at RBG Kew, WP"

803	**Well controlled by herbicides**	
	Source(s)	**Notes**
	Weber, E. (2003). Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Unknown. Possible that herbicides used to control Opuntia species may be effective on Brasiliopuntia] "The best time for chemical control is before fruit swelling occurs, because seeds from unripe fruits are also viable. A very effective control is applying MSMA by stem injection. Frequent follow up programmes are necessary to treat regrowth and seedlings"

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	
	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.	[Unknown if cutting back will result in resprouting, but fragmentation of cladodes may indicate an ability to regenerate from damage] "the terminal joints flat and leaf-like, many of these in time dropping off"

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. (2022). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Able to grow in tropical climates
• Naturalized in Florida, & Puerto Rico. Naturalizing on Hawaii Island
• Spiny
• Spines may deter browsing
• Younger plants shade tolerant; older plants thrive in full sun
• Tolerates many soil types
• Reproduces by seeds and vegetatively by fallen pads
• Seeds dispersed by fruit-eating animals and intentionally by people
• Limited ecological information outside native range may reduce accuracy of risk prediction

Low Risk Traits
• Non-toxic
• Ornamental uses and edible fruit
• Seeds relatively large, which may limit accidental dispersal
• Fruit may ripen after falling to ground, which could limit bird dispersal