Taxon: Senna polyphylla (Jacq.) H. S. Irwin & Barneby **Family:** Fabaceae

Common Name(s): desert cassia **Synonym(s):** Cassia polyphylla Jacq.

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 4 Nov 2021

WRA Score: **0.0** **Designation:** L **Rating:** Low Risk

Keywords: Shrub/Tree, Ornamental, Full Sun, Slow Growing, Animal-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	y
301	Naturalized beyond native range		
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	n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals	y=1, n=-1	y
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	n
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	y

Qsn #	Question	Answer Option	Answer
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		
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	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)	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	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)		
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**
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	[Not domesticated] "Locally common in shrub thickets and dry fores ts of south coast and lower Cordillera from sea level to 1,000 feet altitude in Puerto Rico from Guayama to Guanica and Caho Rojo. Also St. Croix, St. Thomas, St. John, and Anegada. Sometimes grown for ornament. Recorded as cultivated at Grenada."

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. (2021). Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. (2021). 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**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 3 Nov 2021]	"Native Southern America CARIBBEAN: Hispaniola, United States [Puerto Rico, Virgin Islands, U.S.], Virgin Islands (British)"
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"RANGE.-Hispaniola (Dominican Republic), Puerto Rico, and Virgin Islands."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 3 Nov 2021]	

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

Qsn #	Question	Answer
	Dave's Garden. (2021). Senna polyphylla. https://davesgarden.com/guides/pf/go/56171/. [Accessed 3 Nov 2021]	"Hardiness: 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)"
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"Locally common in shrub thickets and dry fores ts of south coast and lower Cordillera from sea level to 1,000 feet altitude in Puerto Rico from Guayama to Guanica and Caho Rojo. Also St. Croix, St. Thomas, St. John, and Anegada. Sometimes grown for ornament. Recorded as cultivated at Grenada."
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The species occurs at elevations from near sea level to about 300 m above sea level (Little and others 1974). Annual rainfall ranges from about 750 mm to about 1200 mm."

204	**Native or naturalized in regions with tropical or subtropical climates**	**y**
	Source(s)	**Notes**
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"RANGE.-Hispaniola (Dominican Republic), Puerto Rico, and Virgin Islands."

205	**Does the species have a history of repeated introductions outside its natural range?**	**y**
	Source(s)	**Notes**
	Imada, C.T., Staples, G.W. & Herbst, D.R. 2005. Annotated Checklist of Cultivated Plants of Hawai'i. http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/. [Accessed 3 Nov 2021]	"Senna polyphylla (N. Jacquin) H. S. Irwin & Barneby (Confirmed) First Collected: 1960 Locations: Foster Botanical Garden (Confirmed) Koko Crater Botanical Garden Pacific Tropical Botanical Garden (now National Tropical Botanical Garden) Waimea Arboretum & Botanical Garden (Confirmed)"
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Senna polyphylla var. polyphylla Irwin & Barneby is native to Puerto Rico and the Virgin Islands and has been recorded under cultivation in Florida, Grenada, Guyana, Surinam, Brazil, and probably elsewhere."
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"Sometimes grown for ornament. Recorded as cultivated at Grenada."

301	**Naturalized beyond native range**	

Qsn #	Question	Answer
	Source(s)	**Notes**
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"References: Guyana-W-32, India-W-1977."
	Chong, K.Y., Tan, H.T.W. & Corlett, R.T. (2009). A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	"Senna polyphylla (Jacq.) H.S. Irwin & Barneby; Fabaceae; cultivated only"
	Conservatoire et Jardin botaniques & South African National Biodiversity Institute. (2012). African Plant Database (version 3.4.0) - Senna polyphylla (Jacq.) H.S. Irwin & Barneby. http://www.ville-ge.ch. [Accessed 3 Nov 2021]	"Status for TA : accepted (naturalised-introduced)" [Unclear if status is introduced or naturalized. No distinction made in report]
	Fernández-Concha, G. C., Tapia-Muñoz, J. L., Campos-Ríos, M. G., Hernández-Aguilar, S., Juan-Qui, M., Morillo, I. M. R., & May-Pat, F. (2000). Notes on the Flora of the Yucatan Peninsula I: New Records for the Peninsular Flora. Harvard Papers in Botany, 5(1): 129-156	[Unclear if naturalized, or cultivated] "Specimen examined: MEXICO. Yucatan: Municipio Maxcanu, 8 km al sur del desvfo hacia Chunchucmil desde la carretera MeridaCelestun, aprox. 20° 47'05" N, 90° 12'00" W, 0-5 m, selva baja caducifolia entremezclada con selva baja inundable, "flores amarillo brillante," 22 January 1998, G. Camevali, L. Benzing, F. May-Pat, M. Gomez-Juarez, and D. Mondragon 4911 (CICY, MEXU, MO); Municipio Celestun, Zona de las salinas al S de Celestun, matorral de duna, "abundancia regular, flores amarillas," 10 October 1986, C. Chan 7123 (CICY, MEXU, XAL). These are the first published records of this showy yellow-flowered shrub from continental America."
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence in Hawaiian Islands
	Gann GD, Stocking CG and Collaborators. (2001-2021). Floristic Inventory of South Florida Database Online. The Institute for Regional Conservation. Delray Beach, Florida. https://regionalconservation.org. [Accessed 3 Nov 2021]	SOUTH FLORIDA Occurrence: Present SOUTH FLORIDA Native Status: Not Native, Cultivated Only SOUTH FLORIDA Cultivated Status: Cultivated

302	Garden/amenity/disturbance weed	
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[Occurs in open, disturbed areas, but unlikely to become weedy given growth rate and shade intolerance] "Because desert cassia is intolerant of shade and grows slowly, it is usually found in areas where competition is minimal—dry, very rocky, excessively drained, overgrazed, and sites subject to occasional fires. Bare ground is probably necessary for reproduction."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Cited as a weed of unspecified impacts. Unable to corroborate status with cited references
	Knox, G. W., Wilson, S. B., Deng, Z. and Freyre, R. (2018). Alternatives to Invasive Plants Commonly Found in South Florida Landscapes. ENH1222. Revised. University of Florida Institute of Food and Agricultural Sciences, Gainesville, FL. http://edis.ifas.ufl.edu. [Accessed 3 Nov 2021]	Senna polyphylla recommended as a Non-native, non-invasive substitute for Senna pendula var. glabrata

Qsn #	Question	Answer
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
	CABI. (2021). Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc	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
	CABI. (2021). Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc	No evidence

305	**Congeneric weed**	**y**
	Source(s)	**Notes**
	Weber, E. (2017). Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"Senna alata ...Where invasive it forms dense thickets, shading out all other plants and preventing any regeneration of native species. The shrub establishes quickly in disturbed sites. Heavy infestations may restrict access to water for livestock and wildlife (Parsons and Cuthbertson, 2001)." ... "Senna didymobotrya ... Christmas bush forms extensive and dense thickets climbing over native vegetation, impeding growth and regeneration of native species. The shrub grows abundantly along rivers and in savannas. Extensive thickets affect wildlife by reducing habitats and restricting access to water (Macdonald, 1983; Henderson, 2001). Little is known about the ecology of this plant as an invader."
	Wakibara, J. V., & Mnaya, B. J. (2002). Possible control of Senna spectabilis (Caesalpiniaceae), an invasive tree in Mahale mountains National Park, Tanzania. Oryx, 36(4), 357-363	"Senna spectabilis is a tree native to South and Central America. Thirty-five years ago it invaded the Mahale Mountains National Park in western Tanzania where it presently covers c. 225 ha. We quantified its occurrence relative to that of sympatric species of native trees, and compared girdling and felling as methods for its control in three 0.25 ha plots. Within invaded areas of forest this exotic species was both the most abundant and dominant of the 26 species of tree recorded. During 4 years of monitoring the experimental plots the abundance of S. spectabilis declined markedly in the plots where control methods were practised, but increased slightly in the unmanipulated plot. In contrast, the abundance of native tree species increased markedly in the plots where S. spectabilis had been removed or killed, with higher densities in the girdled rather than the felled plot. S. spectabilis appears to suppress the recruitment of native trees in the Park, and its removal can encourage regeneration of the degraded forest without the need for artificial seeding."
	Weber, E. (2003). Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	Senna alata, S. bicapsularis, S. didymobotrya, S. obtusifolia [listed as significant weeds of natural areas]

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	**Notes**
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	[No evidence] "Shrub or small tree to 15 feet high and 4 inches in trunk diameter, reported to become larger, much branched, with many slender spreading twigs, unbranched, curved, and slightly drooping at ends. Probably deciduous in dry areas. Bark of trunk and larger branches blackish, thick, furrowed into short scaly plates. Inner bark light brown and slightly bitter. The young twigs are very slender, dull light green, slightly hairy, the older twigs light brown, warty, and slightly fissured. The leaves are alternate on rapidly growing twigs but mostly clustered 8-5 at nodes of older twigs. Stipules are paired, threadlike, about ¼ inch long. The slender light green hairy axis bears leaflets almost to the base. Leaflets are slightly unequal at base and rounded with minute point at apex, thin, with veins inconspicuous, dull green above and light green beneath, becoming nearly hairless, those of a pair folding together at night."

402	Allelopathic	
	Source(s)	**Notes**
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence found, but evidence of allelopathy documented in other Senna species

403	Parasitic	n
	Source(s)	**Notes**
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"Shrub or small tree to 15 feet high and 4 inches in trunk diameter, reported to become larger, much branched, with many slender spreading twigs, unbranched, curved, and slightly drooping at ends." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	y
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[Presumably unpalatable] "Cows apparently do not readily eat the foliage of desert cassia—the species is more common in heavily grazed rangeland than elsewhere."

Qsn #	Question	Answer
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**
	Halbert, S. E., & Burckhardt, D. (2020). The psyllids (Hemiptera: Psylloidea) of Florida: newly established and rarely collected taxa and checklist. Insecta Mundi 0788: 1–88	"Mitrapsylla albalineata was discovered for the first time in Florida on 26.iii.2002 at a nursery in Miami (Miami-Dade County) on Senna polyphylla (Jacq.) Irwin and Barneby (Fabaceae) by DPI inspector Duraid I. Hanna (FSCA# E2002-1005) (Fig. 148). More specimens were collected from the same location in August and September 2002 (FSCA#s E2002-4022, 4475, 4693). A population was found at the Fruit and Spice Park in Homestead (Miami-Dade County) in May 2003 on Senna pendula (Willd.) H.S. Irwin and Barneby (FSCA# E2003-2160). One specimen was collected in Collier County on 20.iv.2017 (FSCA# E2017 1590), and a population was found at a nursery in Sarasota County on 27.ix.2019 (FSCA# E2019-5455). The more recent collections indicate that this species is still around and possibly moving in nursery trade. Prior to its discovery in Florida, M. albalineata was known only from Mexico, Nicaragua, El Salvador, and Venezuela (Hodkinson and White 1981). The Florida host is Senna, on which it is a pest, causing severe leaf curling and distortion (Fig. 148). A single primary parasite, Psyllaephagus sp. (Hymenoptera: Encyrtidae), was obtained from the colony collected on 2.x.2002 from the infested nursery. There have been a few subsequent collections, but the species has not become a widespread pest, even though the plant is a popular ornamental."
	Learn 2 Grow. (2021). Senna polyphylla. http://www.learn2grow.com/plants/senna-polyphylla/. [Accessed 3 Nov 2021]	"Unfortunately, it also is a host for pink hibiscus mealybug, making it disfavored for landscape use in subtropical regions such as southern Florida."

407	Causes allergies or is otherwise toxic to humans	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

Qsn #	Question	Answer
408	**Creates a fire hazard in natural ecosystems**	
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[Unlikely. May benefit from fire, but relatively slow growth rate and low density would probably not contribute much to fuel load, even in fire prone habitats] "Annual rainfall ranges from about 750 mm to about 1200 mm. Because desert cassia is intolerant of shade and grows slowly, it is usually found in areas where competition is minimal—dry, very rocky, excessively drained, overgrazed, and sites subject to occasional fires. Bare ground is probably necessary for reproduction."

409	**Is a shade tolerant plant at some stage of its life cycle**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Because desert cassia is intolerant of shade and grows slowly, it is usually found in areas where competition is minimal—dry, very rocky, excessively drained, overgrazed, and sites subject to occasional fires. Bare ground is probably necessary for reproduction."

410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"In Puerto Rico, desert cassia grows on a wide variety of well-drained soils that have developed over igneous, metamorphic (including ultramafics), and sedimentary (including limestone) rocks. It is tolerant of salt spray (Botanics Wholesale 2001)."

411	**Climbing or smothering growth habit**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Desert cassia, also known in Spanish as hediondilla and retama prieta, is a shrub or occasionally a small tree of dry and moist forests of the middle Caribbean, now cultivated as an ornamental. It is usually 2 or 3 m in height, but rarely reaches 5 m in height and 12 cm in trunk diameter."

Qsn #	Question	Answer
412	**Forms dense thickets**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[No evidence] "Because desert cassia is intolerant of shade and grows slowly, it is usually found in areas where competition is minimal—dry, very rocky, excessively drained, overgrazed, and sites subject to occasional fires. Bare ground is probably necessary for reproduction." ... "Seedlings in the wild are scattered and not abundant."

501	Aquatic	n
	Source(s)	**Notes**
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	[Terrestrial] "Locally common in shrub thickets and dry fores ts of south coast and lower Cordillera from sea level to 1,000 feet altitude in Puerto Rico from Guayama to Guanica and Caho Rojo. Also St. Croix, St. Thomas, St. John, and Anegada."

502	Grass	n
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/. [Accessed 3 Nov 2021]	Family: Fabaceae (alt. Leguminosae) Subfamily: Caesalpinioideae Tribe: Cassieae Subtribe: Cassiinae

503	Nitrogen fixing woody plant	
	Source(s)	**Notes**
	Werner, D., & Newton, W. E. (Eds.). (2005). Nitrogen fixation in agriculture, forestry, ecology, and the environment (Vol. 4). Springer, Dordrecht, The Netherlands	[Unknown. Many Senna species are non-nodulating, and non-nitrogen fixing] "With very few exceptions, which will be discussed later, nodulation appears to be a generic character. Indeed, genera that have recently been sub-divided on classical taxonomic grounds have proved to be coincident with either the presence or absence of nodules, e.g., Chamaecrista (nodulating) from both Cassia and Senna (nonnodulating), and Sophora (nodulating) from Stypholobium (non-nodulating)."

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Multiple stems sprouting from the root crown are common, even in small plants. The stems are mostly clean, long and wand-like. Desert cassia develops a root system with a strong taproot."

Qsn #	Question	Answer
601	**Evidence of substantial reproductive failure in native habitat**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[No evidence] "Range.—Senna polyphylla var. polyphylla Irwin & Barneby is native to Puerto Rico and the Virgin Islands and has been recorded under cultivation in Florida, Grenada, Guyana, Surinam, Brazil, and probably elsewhere. The variety montis-christi Irwin & Barneby is an endemic of Hispaniola, and the variety neglecta Irwin & Barneby is found only on the island of Anegada, British Virgin Islands (Liogier 1988)."

602	**Produces viable seed**	**y**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Desert cassia flowers and fruits throughout the year (Little and others 1974). The seeds from a Puerto Rican collection averaged 20,400 seeds/kg. Placed on moist filter paper without any pre-treatment, they began germinating in 2 days and gave 59 percent germination (Francis and Rodríguez 1993)."
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"The pods have a short stalk at base and short point at apex, are flattened between the flat seeds, and split open along 2 lines. Flowering and fruiting throughout the year."

603	**Hybridizes naturally**	
	Source(s)	**Notes**
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence found

604	**Self-compatible or apomictic**	
	Source(s)	**Notes**
	Learn 2 Grow. (2021). Senna polyphylla. http://www.learn2grow.com/plants/senna-polyphylla/. [Accessed 3 Nov 2021]	"Self-Sowing - Yes" [Unknown if plants are self-fertile, or merely capable of recruiting without assistance]

Qsn #	Question	Answer
605	**Requires specialist pollinators**	**n**
	Source(s)	**Notes**
	Flora Fauna Web. (2021). Senna polyphylla. https://www.nparks.gov.sg/florafaunaweb/flora/2/4/2452. [Accessed 3 Nov 2021]	"Fauna Pollination - Bee-Attracting"
	Dave's Garden. (2021). Senna polyphylla. https://davesgarden.com/guides/pf/go/56171/. [Accessed 3 Nov 2021]	"On Jul 26, 2009, flaflwrgrl from Allthingsplants, FL (Zone 8b) wrote: Just a lovely small tree. It blooms off & on all year long. This tree is never still or silent. The bees are always humming in it's flowers and butterflies dancing from branch to branch providing constant movement even on the most still of days."
	Soh, Z. W. W., & Ngiam, R. W. J. (2013). Flower-visiting bees and wasps in Singapore parks (Insecta: Hymenoptera). Nature in Singapore, 6, 153-172	"Table 2. Summary of codes assigned to plant species visited by insects, and total no. of species of visiting Hymenoptera." [Senna polyphylla - Total No. of Hymenopteran Species Visited = 4]

606	**Reproduction by vegetative fragmentation**	**n**
	Source(s)	**Notes**
	Flora Fauna Web. (2021). Senna polyphylla. https://www.nparks.gov.sg/florafaunaweb/flora/2/4/2452. [Accessed 3 Nov 2021]	"Propagation Method: Seed"
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[No evidence of vegetative spread] "Reproduction.—Desert cassia flowers and fruits throughout the year (Little and others 1974). The seeds from a Puerto Rican collection averaged 20,400 seeds/kg. Placed on moist filter paper without any pre-treatment, they began germinating in 2 days and gave 59 percent germination (Francis and Rodríguez 1993). The principal mode of dispersal today is by livestock. Seedlings in the wild are scattered and not abundant."

607	**Minimum generative time (years)**	**>3**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[Presumably >4 years] "Growth and Management.—Growth is slow. About 30 cm of annual height increase is normal in Puerto Rico. Diameter growth ranges between about 1 and 4 mm/yr. Although no planting experience is published, plantations could probably be established with containerized seedlings followed by several years of weeding until the seedlings grew above herb and grass competition."

701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown (Howard 1988, Liogier 1988, Little and others 1974)." ... "The principal mode of dispersal today is by livestock."

Qsn #	Question	Answer
702	**Propagules dispersed intentionally by people**	**y**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Senna polyphylla var. polyphylla Irwin & Barneby is native to Puerto Rico and the Virgin Islands and has been recorded under cultivation in Florida, Grenada, Guyana, Surinam, Brazil, and probably elsewhere."
	Little Jr, E. L., Woodbury, R. O., & Wadsworth, F. H. (1974). Trees of Puerto Rico and the Virgin Islands. Second Volume. Agriculture Handbook 449, US Department of Agriculture, Washington, D.C.	"Sometimes grown for ornament. Recorded as cultivated at Grenada."

703	**Propagules likely to disperse as a produce contaminant**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock."

704	**Propagules adapted to wind dispersal**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock."

705	**Propagules water dispersed**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock." [Possibly, if cultivated near water, but otherwise unlikely]

Qsn #	Question	Answer
706	**Propagules bird dispersed**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock."

707	**Propagules dispersed by other animals (externally)**	**n**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock." [Presumably internally dispersed. Fruits and seeds lack means of attachment]

708	**Propagules survive passage through the gut**	**y**
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"The legume is linear, 8 to 15 cm long, slightly contorted, flattened between the seeds, and dark brown at maturity. The seeds are round, flattened, and dark brown ... The principal mode of dispersal today is by livestock." [Presumably internally dispersed]

801	**Prolific seed production (>1000/m2)**	
	Source(s)	**Notes**
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	"Desert cassia flowers and fruits throughout the year (Little and others 1974). The seeds from a Puerto Rican collection averaged 20,400 seeds/kg." ... "Seedlings in the wild are scattered and not abundant."

802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	Royal Botanic Gardens Kew. (2021) Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 3 Nov 2021]	"Storage Behaviour: Orthodox Storage Conditions: 100 % viability following drying to mc's in equilibrium with 15 % RH and freezing for approx. 1.26 years at -20°C at RBG Kew, WP"

803	**Well controlled by herbicides**	

Qsn #	Question	Answer
	Source(s)	**Notes**
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence of control. Several invasive Senna species are effectively controlled with herbicides, which would likely work on Senna polyphylla if needed

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	
	Source(s)	**Notes**
	Learn 2 Grow. (2021). Senna polyphylla. http://www.learn2grow.com/plants/senna-polyphylla/. [Accessed 3 Nov 2021]	"Branches may be selectively trimmed back in spring. "
	Treeworld Wholesale. (2021). Senna polyphylla (Desert cassia). https://www.treeworldwholesale.com/product/senna-polyphylla-desert-cassia/. [Accessed 3 Nov 2021]	"It requires pruning."
	Francis, J. K. (ed.). (2004). Wildland shrubs of the United States and its Territories: thamnic descriptions: volume 1. Gen. Tech. Rep. IITF-GTR-26. USDA, Forest Service, International Institute of Tropical Forestry, San Juan, PR, & USDA, Forest Service, Rocky Mountain Research Station, Fort Collins, CO	[Unknown, but may benefit from fire-induced disturbance] "Because desert cassia is intolerant of shade and grows slowly, it is usually found in areas where competition is minimal—dry, very rocky, excessively drained, overgrazed, and sites subject to occasional fires. Bare ground is probably necessary for reproduction."

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. (2021). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Thrives, and could spread, in regions with arid tropical climates
• Possibly naturalized in Africa and Mexico
• Other Senna species are invasive
• Unpalatable to cattle
• May be a host of some plant pests
• Tolerates many soil types
• Reproduces by seeds
• Seeds dispersed by livestock and intentionally by people
• Tolerates pruning; may resprout after repeated cutting

Low Risk Traits
• No reports of invasiveness or negative impacts where introduced
• Unarmed (no spines, thorns, or burrs)
• Not reported to be toxic
• Thrives in full sun, high light environments (dense shade may inhibit ability to spread
• Not reported to spread vegetatively
• Slow growth rate and time to maturity
• Seeds unlikely to be dispersed long distances