

Taxon: <i>Prestoea acuminata</i> var. <i>montana</i>	Family: Arecaceae
Common Name(s): mountain cabbage palm (P. a. palma ramosilla palmito dulce sierra palm	Synonym(s): <i>Acrista monticola</i> O. F. Cook <i>Euterpe montana</i> Graham <i>Prestoea montana</i> (Graham) G.

Assessor: Assessor	Status: Assessor Approved	End Date: 16 Aug 2014
WRA Score: 1.0	Designation: EVALUATE	Rating: Evaluate

Keywords: Tropical Palm, Dense Stands, Ornamental, Self-Compatible, Bird-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	n
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
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)	n
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		
405	Toxic to animals	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	n
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	y=1, n=-1	y
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		
706	Propagules bird dispersed	y=1, n=-1	y
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)	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
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	No evidence

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2014. 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
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Distribution, habitat, and ecology. Cuba (Oriente and near Trinidad), Hispaniola, Puerto Rico, Lesser Antilles, and Tobago (Fig. 24); dense stands on mountain slopes at 500-1000(-1500) m."

202	Quality of climate match data	High
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Distribution, habitat, and ecology. Cuba (Oriente and near Trinidad), Hispaniola, Puerto Rico, Lesser Antilles, and Tobago (Fig. 24); dense stands on mountain slopes at 500-1000(-1500) m."
	Dave's Garden. 2014. PlantFiles: Mountain Cabbage Palm - <i>Prestoea acuminata var. montana</i> . http://davesgarden.com/guides/pf/go/104541/ . [Accessed 15 Aug 2014]	"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)"
	Riffle, R.L. & Craft, P. 2003. <i>An Encyclopedia of Cultivated Palms</i> . Timber Press, Portland, OR.	"This beautiful species is adapted only to frost-free regions that have nights cooler than those of the lowland tropics, such as are found in southern Florida." (p. 419)

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Distribution, habitat, and ecology. Cuba (Oriente and near Trinidad), Hispaniola, Puerto Rico, Lesser Antilles, and Tobago (Fig. 24); dense stands on mountain slopes at 500-1000(-1500) m."

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"There have been no reports of the species being planted outside its native range."

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	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 15 Aug 2014]	[No evidence to date] " <i>Prestoea montana</i> (R. C. Graham) G. Nicholson (Confirmed) First Collected: 1990 Locations: Harold L. Lyon Arboretum (Confirmed) Pacific Tropical Botanical Garden (now National Tropical Botanical Garden) Waimea Arboretum & Botanical Garden"
	Daehler, C. C. & Baker, R. F. 2006. New Records of Naturalized and Naturalizing Plants Around Lyon Arboretum, Mānoa Valley, O'ahu. Bishop Museum Occasional Papers 87: 3-18	[No evidence, despite presence in Lyon Arboretum collection]
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Zona, S., James, A. & Maidman, K. 2003. <i>Palms</i> 47(3): 151-157	[No reports of invasiveness to date, but adaptation to disturbance could allow this palm to exploit these types of habitats where introduced] " <i>Elsewhere in the Caribbean, Prestoea acuminata</i> var. <i>montana</i> is a pioneer species. Under natural conditions, it rapidly colonizes landslides and tree fall gaps, and it is unable to regenerate in shade."

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

304	Environmental weed	n
	Source(s)	Notes
	Meyer, J. Y., Lavergne, C., & Hodel, D. R. 2008. Time bombs in gardens: invasive ornamental palms in tropical islands, with emphasis on French Polynesia (Pacific Ocean) and the Mascarenes (Indian Ocean). <i>Palms</i> , 52(2): 71-83	No evidence
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

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

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Stems solitary or cespitose and then with 2-12 stems per plant, erect or slightly leaning, (3-)6-15 m tall, 4-20 cm diam., usually gray with lichens, often with a cone of roots visible at the base. Leaves 4-10, spreading or erect; sheath closed for 1/3-2 its length and forming a partial crownshaft, 26-80(-108) cm long, green, dark green, purplish, violet, or reddish brown, densely to moderately covered with appressed, brown, fimbriate scales; petiole 0-30(-60) cm long, densely whitish brown tomentose adaxially, usually glabrous abaxially, glabrescent; rachis (0.6-)1.1-2.6 m long, with tomentum like that of petiole; pinnae 30-60 per side, regularly spaced and stiffly spreading in the same horizontal plane, seldom erect, subopposite or alternate, linear-lanceolate, coriaceous, with prominent midvein adaxially and abaxially and with several prominent lateral veins, the midvein with ramenta abaxially; basal pinna 39-69 x 0.5-2 cm; middle pinnae (0.3-)0.6-1.2 m x (2-)3-6.5 cm; apical pinna 13-34 x 0.5-2.5 cm."

402	Allelopathic	n
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	[Unknown, but does grow with other species] "In a 700-m elevation floodplain, the main associates of sierra palm are (in order of importance) <i>Micropholis chrysophylloides</i> Pierre, <i>Croton poecilanthus</i> Urban, <i>Eugenia eggersii</i> Kiaersk., <i>Calycogonium squamulosum</i> Cogn., and <i>M. garciniaefolia</i> Pierre (9)."

403	Parasitic	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	No evidence. Arecaceae

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes

Qsn #	Question	Answer
	Tropical Species Database. 2014. <i>Prestoea acuminata</i> . http://tropical.theferns.info/viewtropical.php?id=Prestoea+acuminata . [Accessed 15 Aug 2014]	"Known Hazards - None known"
	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
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"Sierra palm generally has few insect and disease problems. However, infestations of the Lepidopteran <i>Homaledra sabalella</i> (Chambers) have been noted (21). The termite <i>Nasutitermes costalis</i> (Holmgren) frequently builds trails ascending sierra palm trunks to feed on dead leaves, a process that is not harmful to the palms. <i>Cocotrypes carpophagus</i> Hornung (Coleoptera: Scolytidae) attacks sierra palm fruits and seeds after they fall to the forest floor (22). The attacks are more intense in wetter climates."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Tropical Species Database. 2014. <i>Prestoea acuminata</i> . http://tropical.theferns.info/viewtropical.php?id=Prestoea+acuminata . [Accessed 15 Aug 2014]	[No evidence] "The leaf buds are commonly harvested as a food crop, both for local use and for export[768]. The plant is also a source of wood material for thatching. Where growing wild, the plant serves a useful purpose of maintaining the watershed and protecting the soil from erosion. Known Hazards None known"
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	[No evidence, and unlikely given wet forest habitat] "General distribution: Throughout the moist to wet mountains of the Greater and Lesser Antilles, but absent from Jamaica and the Virgin Islands. Distribution in Puerto Rico: Frequent to abundant in moist or wet montane (rarely submontane) forest. Recorded from Adjuntas, Aguas Buenas, Arecibo, Barranquitas, Bayamón, Cayey, Jayuya, Maricao, Naguabo, Orocovis, Patillas, Ponce, Río Grande, San Lorenzo, Utuado, and Yauco."
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	[No evidence, and unlikely given wet habitats] "Sierra palm grows in four of the Holdridge (13) subtropical life zones: moist forest, wet forest, lower montane wet forest, and lower montane rain forest."

409	Is a shade tolerant plant at some stage of its life cycle	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Myster, R. W., & Fetcher, N. 2005. Ecotypic differentiation and plant growth in the Luquillo Mountains of Puerto Rico. <i>Journal of Tropical Forest Science</i> , 17(1): 163-169	"Although <i>P. acuminata</i> var. <i>montana</i> is shade tolerant (Lugo 1970), its recruitment is linked to large-scale disturbances by hurricanes (Weaver et al. 1986)."
	Zona, S., James, A. & Maidman, K. 2003. <i>Palms</i> 47(3): 151-157	"Elsewhere in the Caribbean, <i>Prestoea acuminata</i> var. <i>montana</i> is a pioneer species. Under natural conditions, it rapidly colonizes landslides and tree fall gaps, and it is unable to regenerate in shade."
	Wen, S., Fetcher, N., & Zimmerman, J. K. 2008. Acclimation of tropical tree species to hurricane disturbance: ontogenetic differences. <i>Tree physiology</i> , 28(6): 935-946	"In tabonuco forests at low elevation, <i>P. acuminata</i> var. <i>Montana</i> shows adaptation to mature forests. The juveniles can persist and grow slowly in the forest understory. In palm forests at higher elevation, <i>P. acuminata</i> var. <i>montana</i> often occurs in early successional environments, where it grows rapidly."
	Lugo, A. E., & Batlle, C. T. R. 1987. Leaf production, growth rate, and age of the palm <i>Prestoea montana</i> in the Luquillo Experimental Forest, Puerto Rico. <i>Journal of Tropical Ecology</i> , 3(02): 151-161	"It appears that given proper substrates, sierra palm will grow in response to light intensity. Under favourable light conditions the palm develops a large, deep-green crown, and exhibits explosive vertical height growth (wider distances between leaf scars). If the proper light conditions fail to materialize, crowns are smaller and not as vigorous (occasionally yellowing), and height growth is much reduced (distances between leaf scars are short). To be of significance to height growth, proper light conditions must occur early in the life of a sierra palm because after a certain age these palms do not appear to respond to an increase in light."
	Riffle, R.L. & Craft, P. 2003. <i>An Encyclopedia of Cultivated Palms</i> . Timber Press, Portland, OR.	"It needs partial shade and protection from the midday sun when young, wherever it is grown." (p. 419)
	Uriarte, M., Canham, C. D., Thompson, J., Zimmerman, J. K., & Brokaw, N. 2005. Seedling recruitment in a hurricane-driven tropical forest: light limitation, density-dependence and the spatial distribution of parent trees. <i>Journal of Ecology</i> , 93(2): 291-304	" <i>P. acuminata</i> , with relatively large seeds, is generally considered a medium light demanding species but is also in group one and its apparent preference for low light in this analysis may also be a result of drought and increased herbivory in the more open canopy areas..."
	Adame, P., Brandeis, T. J., & Uriarte, M. 2014. Diameter growth performance of tree functional groups in Puerto Rican secondary tropical forests. <i>Forest Systems</i> , 23(1): 52-63	"Table 1. Functional groups defined on the basis of regeneration strategy and adult height of the species. Family is provided in parenthesis" ... "Medium shade tolerant species (MT)" [Includes <i>Prestoea acuminata</i> var. <i>montana</i> (Arecaceae)]

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	Riffle, R.L. & Craft, P. 2003. <i>An Encyclopedia of Cultivated Palms</i> . Timber Press, Portland, OR.	"It languishes in calcareous soils, even when mulched." (p. 419)
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"Soils are variable in texture, with or without gravel and boulders, very humid to wet, frequently anoxic and sometimes waterlogged."

Qsn #	Question	Answer
411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Stems usually solitary, to 15 m tall, to 20 cm diam. Inflorescences with the distal rachillae much shorter than the proximal ones, cylindrical, glabrous or less commonly with crustose hairs; triads superficial"

412	Forms dense thickets	y
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Cuba (Oriente and near Trinidad), Hispaniola, Puerto Rico, Lesser Antilles, and Tobago (Fig. 24); dense stands on mountain slopes at 500-1000(-1500) m."
	Gregory, F. A., & Sabat, A. M. 1996. The Effect of Hurricane Disturbance on the Fecundity of Sierra Palms (<i>Prestoea montana</i>). <i>Bios</i> , 67(3): 135-139	"Sierra palms are one of the most abundant trees and an important structural component in the montane forests of the West Indies, occurring from about 300m above sea level to altitudes over 1000m and at densities as high as 1206 stems/ha (Frangi and Lugo 1985). Sierra palms can reach a height of about 15m and can have between 6 and 12 leaves."
	Riffle, R.L. & Craft, P. 2003. <i>An Encyclopedia of Cultivated Palms</i> . Timber Press, Portland, OR.	"The species is most abundant in the mountains of Puerto Rico, where it forms vast colonies on the slopes."

501	Aquatic	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	Terrestrial palm

502	Grass	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	Areaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	Areaceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	"Stems usually solitary, to 15 m tall, to 20 cm diam"

Qsn #	Question	Answer
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	[Widespread distribution. No evidence] "Distribution, habitat, and ecology. Cuba (Oriente and near Trinidad), Hispaniola, Puerto Rico, Lesser Antilles, and Tobago (Fig. 24); dense stands on mountain slopes at 500-1000(-1500) m."
602	Produces viable seed	y
	Source(s)	Notes
	Tropical Species Database. 2014. <i>Prestoea acuminata</i> . http://tropical.theferns.info/viewtropical.php?id=Prestoea+acuminata . [Accessed 15 Aug 2014]	"Propagation - Seed"
603	Hybridizes naturally	
	Source(s)	Notes
	Henderson, A., & Galeano, G. 1996. Euterpe, <i>Prestoea</i> , and <i>Neonicholsonia</i> (Palmae). <i>Flora Neotropica</i> , 72: 1-89	Unknown. No hybrids reported
604	Self-compatible or apomictic	y
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. <i>Sierra palm</i> . SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"The flowers of the sierra palm are pollinated by honeybees and small flies. Both selfing and outcrossing appear to occur (1)."
605	Requires specialist pollinators	n
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. <i>Sierra palm</i> . SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"Fly, bee, and beetle pollination are considered the major means of pollination in this genus (8)."

Qsn #	Question	Answer
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	[No evidence from floral morphology] "Inflorescences 2- several, infrafoliar, not erect in bud, in length about equaling the crownshaft; peduncles 10-20 cm long, densely appressed-lepidote with pale to dark stellate scales; primary bracts leathery or subwoody in texture, usually inserted 3-5.5 cm apart on the peduncle, the first (outer) bract more or less glabrescent, 15-45 cm long, about half the length of the second (inner) bract, the latter densely matted brown-lepidote; rachis ± terete, glabrous or nearly so, bearing 25-50 divaricate branches, these chiefly 10-50 cm long, white or lavender at anthesis, often turning red in fruit, glabrous or nearly so, dilated basally to a broad insertion. Flowers white to lavender, pink, or magenta, subtended by 2 or 3 small bracteoles, in triads (usually 2 staminate with 1 pistillate). Staminate flowers pedicellate; sepals glabrous, unequal, 1.2- 2 mm long., imbricate; stamens white, the anthers 1.8-2.5 mm long; pistillode prominent, variously configured. Pistillate flowers sunken in the rachillae; sepals ca. 2.5 mm long, glabrous, subequal, rounded and concave, minutely ciliate or serrulate; petals 3-4 mm long, glabrous, broadly imbricate, deeply concave, opening only enough to expose the receptive stigmas; staminodia 6; ovary with very short style and 3 stigmas that spread apart when receptive."

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"Vegetative Reproduction.-Sierra palms do not sprout and cannot be rooted by ordinary means. Propagation by tissue culture has not been reported."

607	Minimum generative time (years)	>3
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	[50+ years] "Only open-grown, dominant, and codominant sierra palms flower. These trees are usually 6 m or more in height and at least 50 years old."
	Gamba-Trimiño, C., Bernal, R., & Bittner, J. 2011. Demography of the clonal palm <i>Prestoea acuminata</i> in the Colombian Andes: sustainable household extraction of palm hearts. <i>Tropical Conservation Science</i> 4(4): 386-404	[var. <i>acuminata</i> reaches maturity in 30-40+ years] "Table 1. Age estimates (yrs) for significant biological landmarks of <i>Prestoea acuminata</i> life history at La Planada Reserve, Colombia. Age estimates include seedling stage duration for modeling purposes (but vegetatively-produced ramets bypass this stage). Fast and average growing rates refer to the stemless stage and number of pinnae to one side of the rachis in the newest leaf." ... [Sexual maturity beginning (7.5 m) at 35.5 years for Fast-growing ramets and 47.33 years for Average-growing ramets]

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes

Qsn #	Question	Answer
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	[Possible due to small size, but unlikely. Fruits & seeds lack means of external attachment] "Fruits sunken in the rachillae, 10-12 mm in diam. with conspicuous subapical stigmatic remains, and basally a persistent perianth; seeds 9-10 mm in diam. with a conspicuous adaxial raphe; endosperm ruminant. Seedling leaf bifid."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Riffle, R.L.& Craft, P. 2003. An Encyclopedia of Cultivated Palms. Timber Press, Portland, OR.	Landscaping & ornamental

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	[No evidence and unlikely. Trees take a long time to reach maturity, & despite small size, seeds still relatively large & unlikely to become an inadvertent contaminant of produce] "Fruits sunken in the rachillae, 10-12 mm in diam. with conspicuous subapical stigmatic remains, and basally a persistent perianth; seeds 9-10 mm in diam. with a conspicuous adaxial raphe; endosperm ruminant. Seedling leaf bifid."

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Acevedo-Rodríguez, P. & Strong, M.T. 2005. Monocotyledons and Gymnosperms of Puerto Rico and the Virgin Islands. Contributions from the United States National Herbarium 52: 1-415	"Fruits sunken in the rachillae, 10-12 mm in diam. with conspicuous subapical stigmatic remains, and basally a persistent perianth; seeds 9-10 mm in diam. with a conspicuous adaxial raphe; endosperm ruminant. Seedling leaf bifid."

705	Propagules water dispersed	
	Source(s)	Notes
	Heartsill Scalley, T., Crowl, T. A., & Thompson, J. 2009. Tree species distributions in relation to stream distance in a mid-montane wet forest, Puerto Rico. Caribbean Journal of Science, 45(1), 52-63	[<i>P. acuminata</i> var. <i>montana</i> , a fleshy-fruited palm, is found outside riparian areas, but presence near streams suggests some dispersal by water may also be possible] "Most tree species throughout the LFDP seem to be spatially distributed independent of stream locations. Reed (1998) found that none of the four most common species found in riparian areas of the LFDP had more than 30 percent of their total plot population in the riparian area. Species such as <i>Guarea guidonia</i> and <i>Prestoea acuminata</i> (previously known as <i>montana</i>) that have been observed to be associated with valley bottoms in the Luquillo Mountains (Basnet 1992), were no more or less common at any distance from these streams."

706	Propagules bird dispersed	y
	Source(s)	Notes

Qsn #	Question	Answer
	Munoz, M. C., Londono, G. A., Rios, M. M., & Kattan, G. H. 2007. Diet of the Cauca Guan: exploitation of a novel food source in times of scarcity. <i>The Condor</i> , 109(4): 841-851	"...guans seemed to prefer some species to others that were fruiting in abundance at the same time. For example, <i>A. muca</i> and <i>Prestoea acuminata</i> (Arecaceae) were most consumed after their peak fruiting periods, when their availabilities were decreasing, probably because at their peak fruiting, guans preferred other fruits such as <i>D. macrophyllum</i> and <i>S. quinduense</i> (Fig. 4)."
	Uriarte, M., Canham, C. D., Thompson, J., Zimmerman, J. K., & Brokaw, N. 2005. Seedling recruitment in a hurricane-driven tropical forest: light limitation, density-dependence and the spatial distribution of parent trees. <i>Journal of Ecology</i> , 93(2): 291-304	"Table 1 Number of adult stems (3 8 cm d.b.h. in 1995), maximum diameter (cm), seed weight, dispersers, number of seedlings sampled, and successional status of nine common species at the LFPD. Successional status determined from Thompson et al. (2002), and Zimmerman et al. (1994). Seed weights and dispersers determined from Devoe (1989)1, Zimmerman et al. (2000 2, Francis (1982)3 and Foster (1982)4. Dry seed weights unless indicated otherwise." ... " <i>Prestoea acuminata</i> " ,,, "Dispersers = Bats, birds, gravity"
	Bosque, C., Ramírez, R., & Rodríguez, D. 1995. The diet of the Oilbird in Venezuela. <i>Ornitologia Neotropical</i> , 6: 67-80	"The more uniform availability of palms throughout the year was also reflected in the birds' diet. Thus, the most important palms, <i>Geonoma densa</i> , <i>Euterpe precatoria</i> and <i>Prestoea acuminata</i> were consumed rather evenly throughout the breeding season (Fig. 2)."
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"The sierra palm is also very important to indigenous wildlife. Sierra palm fruits are the single most important food of the endangered Puerto Rican parrot, <i>Amazona vittata vittata</i> (Boddaert), accounting for 22 percent of the feeding records in one study (26). Other bird species, including the scaled pigeon, <i>Columba squamosa</i> Bonnaterre, the Puerto Rican woodpecker, <i>Melanocropes portorricensis</i> (Daudin), and the gray kingbird, <i>Tyrannus dominicensis dominicensis</i> (Gmelin), also feed on sierra palm fruits (33)."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"The sierra palm is also very important to indigenous wildlife. [Adapted for internal dispersal] "Sierra palm fruits are the single most important food of the endangered Puerto Rican parrot, <i>Amazona vittata vittata</i> (Boddaert), accounting for 22 percent of the feeding records in one study (26). Other bird species, including the scaled pigeon, <i>Columba squamosa</i> Bonnaterre, the Puerto Rican woodpecker, <i>Melanocropes portorricensis</i> (Daudin), and the gray kingbird, <i>Tyrannus dominicensis dominicensis</i> (Gmelin), also feed on sierra palm fruits (33)."

708	Propagules survive passage through the gut	y
	Source(s)	Notes
	Uriarte, M., Canham, C. D., Thompson, J., Zimmerman, J. K., & Brokaw, N. 2005. Seedling recruitment in a hurricane-driven tropical forest: light limitation, density-dependence and the spatial distribution of parent trees. <i>Journal of Ecology</i> , 93(2): 291-304	[Presumably survives passage through guts of dispersers] "Dispersers = Bats, birds, gravity"

801	Prolific seed production (>1000/m2)	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	"The density of fruits on the ground ranges widely (table 3), with higher values directly under palm trees." [Highest values under trees = 37 to 55 fruit/m ²]
	Gregory, F. A., & Sabat, A. M. 1996. The Effect of Hurricane Disturbance on the Fecundity of Sierra Palms (<i>Prestoea montana</i>). Bios, 67(3): 135-139	[Potentially large seed numbers] "Sierra palms produced an average of 9572.8 seeds during the study period. However, variability in seed production among individuals was considerable with some palms producing as few as 110 seeds and others as many as 29,587 seeds (Fig. 1)"

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Royal Botanic Gardens Kew. 2008. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/ . [Accessed 15 Aug 2014]	[Unknown] "Storage Behaviour: No data available for species or genus. Of 107 known taxa of family ARECACEAE, 28.97% Orthodox (p/?), 27.10% Recalcitrant(?), 11.21% Intermediate(?), 32.71% Uncertain"

803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Lugo, A. E., Francis, J.K. & Frangi, J.L. 1998. <i>Prestoea Montana</i> (R. Graham) Nichols. Sierra palm. SO-ITF-SM-82. USDA Forest Service, Southern Forest Experiment Station, New Orleans, LA	[Tolerates defoliation, but not snapping or throwing] "Strong winds and hurricanes are the main physical factors that damage palms. The sierra palm is relatively resistant to their effects. About 30 percent of the palms on a bottomland site in eastern Puerto Rico suffered some form of damage from Hurricane Hugo in 1989. However, defoliation accounted for most of the damage observed, and 98 percent were refoliating 9 months later (10). Respectively, 67 percent, 11 percent, and 1 percent of the sierra palms in an upland site in the same general area were defoliated, snapped, or thrown. Of these, only the snapped and thrown individuals died (30)."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Thrives in tropical climates
- Disturbance adapted
- Somewhat shade tolerant
- Forms dense stands in native range
- Self-compatible, monoecious palm
- Seeds dispersed by birds & intentionally by people
- Prolific seed production for a palm
- Limited ecological information makes accurate risk prediction difficult

Low Risk Traits

- No reports of invasiveness or naturalization, but no evidence of widespread introduction outside native range
- Unarmed (no spines, thorns or burrs)
- Ornamental
- Long time to reproductive maturity (40-50+ years)
- Not reported to spread vegetatively

Second Screening Results for Tree/tree-like shrubs

- (A) Shade tolerant or known to form dense stands?> Yes. Somewhat shade tolerant, and forms dense stands in native range
(B) Bird-dispersed?> Dispersed by birds
(C) Life cycle <4 years? No. Reaches maturity in 40-50+ years
Outcome = Evaluate