

Key Words: Evaluate, Naturalizing, Tropical Palm, Edible Fruit, Bird-dispersed, Thicket-forming

Family: *Arecaceae*

Taxon: *Euterpe oleracea*

Synonym: *Euterpe badiocarpa* Barb. Rodr.

Common Name: assai palm
cabbage palm
açai

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	EVALUATE
Status:	Assessor Approved	Data Entry Person:	HPWRA OrgData	WRA Score	5
101	Is the species highly domesticated?		y=-3, n=0		n
102	Has the species become naturalized where grown?		y=1, n=-1		
103	Does the species have weedy races?		y=1, n=-1		
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		n=0, y = 1*multiplier (see Appendix 2)		n
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)		n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)		n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)		n
401	Produces spines, thorns or burrs		y=1, n=0		n
402	Allelopathic		y=1, n=0		n
403	Parasitic		y=1, n=0		n
404	Unpalatable to grazing animals		y=1, n=-1		
405	Toxic to animals		y=1, n=0		n
406	Host for recognized pests and pathogens		y=1, n=0		n
407	Causes allergies or is otherwise toxic to humans		y=1, n=0		n
408	Creates a fire hazard in natural ecosystems		y=1, n=0		n
409	Is a shade tolerant plant at some stage of its life cycle		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		y

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	y=1, n=-1	
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	y=1, n=-1	y
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)	y=1, n=-1	n
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: EVALUATE

WRA Score 5

Supporting Data:

101	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Is the species highly domesticated? No evidence]
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Species suited to tropical or subtropical climate(s) 2-High] "Its natural distribution is in equatorial South America, and Panama and Trinidad."
201	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 2-High] "Native: SOUTHERN AMERICA Caribbean: Trinidad and Tobago - Trinidad Mesoamerica: Panama [e.] Northern South America: French Guiana; Guyana; Suriname; Venezuela - Bolivar, Delta Amacuro, Sucre Brazil: Brazil - Amapa, Maranhao, Para, Tocantins Western South America: Colombia - Antioquia, Cauca, Choco, Cordoba, Narino, Santander, Valle; Ecuador - Esmeraldas, Pichincha"
202	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Quality of climate match data 2-High]
202	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data 2-High]
203	1986. FAO. Food and fruit-bearing forest species 3: Examples from Latin America. Food & Agriculture Organisation of the United Nations, Rome, Italy	[Broad climate suitability (environmental versatility)? No] "It does not occur above 500 m altitude."
203	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Broad climate suitability (environmental versatility)? No] "Climatic amplitude (estimates) - Altitude range: 0 - 100 m - Mean annual rainfall: > 2500 mm - Rainfall regime: uniform - Mean annual temperature: > 26°C - Mean maximum temperature of hottest month: < 27°C - Mean minimum temperature of coldest month: > 25°C - Absolute minimum temperature: > 18°C"
204	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Its natural distribution is in equatorial South America, and Panama and Trinidad."
205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Does the species have a history of repeated introductions outside its natural range? No evidence]
205	2005. Imada, C.T./Staples, G.W./Herbst, D.R.. Annotated Checklist of Cultivated Plants of Hawai'i. The Bishop Museum, http://www2.bishopmuseum.org/HBS/botany/cultivatedplants/	[Does the species have a history of repeated introductions outside its natural range?] "Euterpe oleracea Martius Locations: Harold L. Lyon Arboretum Hilo Forestry Arboretum, Hilo, Hawai'i Ho'omaluhia Botanical Garden Pacific Tropical Botanical Garden (now National Tropical Botanical Garden) Waimea Arboretum & Botanical Garden"
301	2002. Svenning, J.C.. Non-native ornamental palms invade a secondary tropical forest in Panama. <i>Palms</i> . 46(2): 81-86.	[Naturalized beyond native range? Yes] "A number of other nonnative palm species, notably <i>Euterpe oleracea</i> Mart., <i>Livistona saribus</i> , <i>Ptychosperma macarthurii</i> , <i>Bentinckia nicobarica</i> , and <i>Areca triandra</i> , also exhibit vigorous spontaneous regeneration in or just outside Summit Botanical Garden (also see Hubbuch & Craft 1995). <i>Euterpe oleracea</i> and <i>Ptychosperma macarthurii</i> are also well naturalized in the adjacent forest, the first dominating large tracts of swamp forest." ... "My observations exemplifies that popular ornamental palms are able to invade natural, albeit secondary tropical forest vegetation and further suggests that at least <i>Roystonea regia</i> , <i>Ptychosperma macarthurii</i> , <i>Euterpe oleracea</i> and <i>Areca triandra</i> could become abundant, long-term components of Panamanian forests. As species or genera that are invasive in one region often also will be invasive in other regions, these popular ornamental species may invade tropical forests in other parts of the world, too." [Spreading outside natural range within Panama]

302	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Garden/amenity/disturbance weed? Disturbance adapted] "Euterpe oleracea can be an aggressive colonizer of disturbed, swampy areas"
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No evidence]
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No evidence]
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No evidence]
305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No evidence]
401	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Produces spines, thorns or burrs? No evidence] "Stems cespitose with up to 25 stems per clump, or occasionally appearing solitary and then with shoots at the base, erect or leaning, 3-20 m tall, 7-18 cm diam., usually gray with lichens, with a cone of red roots at base, these to 1 cm diam., and with pneumatophores. Leaves 8-14, arching; sheath 0.6-1.5 m long including a short ligule, dark brown, purple, green, dull red-green or yellow-green, with few, flat, scattered, brownish scales especially on ligule; petiole 17-50 cm long, with few, flattened or raised scales or occasionally whitish, scurfy scales adaxially and on upper part of abaxial surface, mostly glabrous abaxially; rachis 1.5-3.7 m long, with similar scales like those of petiole; pinnae 40-80 per side, pendulous or less often horizontal (especially on younger plants), opposite to subopposite, long acuminate, with punctations abaxially, with prominent midvein and 2-3 lateral veins either side, the midvein with few ramenta abaxially; basal pinna 40-74 x 0.5-1.5 cm; middle pinnae 0.6-1.1 m x 2-4.5 cm; apical pinna 24-50 x 0.6-1.8 cm."
402	2013. WRA Specialist. Personal Communication.	[Allelopathic? No evidence]
403	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Parasitic? No] "E. oleracea is a monoecious, multi-stemmed (to 25 stems per clump) feather palm 3-20 m tall and 7-18 cm diameter."
404	2000. Haynes, J./McLaughlin, J.. Edible Palms and Their Uses - Fact Sheet MDCE-00-50-1. University of Florida IFAS Ext., Homestead, FL http://miami-dade.ifas.ufl.edu/old/programs/urbanhort/publications/PDF/EdiblePalms.pdf	[Unpalatable to grazing animals? Unknown] "Although most palm products are not available commercially, heart-of-palm is the basis for a large industry in Central and South America. This industry primarily exploits the following three species, listed in descending order of importance (D. Johnson, pers. comm.): Euterpe oleracea, Bactris gasipaes, and E. edulis." ... "E. oleracea - Assai or acai palm (clustering - Brazil - requires tropical climate). Fruit used locally to make a popular thick liquid called acai or assai; terminal bud also edible." [Fruit and "cabbage", or "heart-of-palm" are edible]
404	2013. Global Facilitation Unit for Underutilized Species. Euterpe oleracea. www.underutilized-species.org [Accessed 07 Mar 2013]	[Unpalatable to grazing animals? Unknown if foliage is palatable] "Seeds may be ground for livestock food or as a component of organic soil for plants."
405	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Toxic to animals? No evidence]
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No evidence]
406	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Host for recognized pests and pathogens? No evidence] No major pests or diseases of assai have been reported."
407	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Causes allergies or is otherwise toxic to humans? No evidence]
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No evidence]
407	2013. WRA Specialist. Personal Communication.	[Causes allergies or is otherwise toxic to humans? No evidence] Probably not - the species is widely used for food and is widely studied for its chemical composition. No evidence of allergies of toxicity to humans.
408	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Creates a fire hazard in natural ecosystems? No evidence] "It grows in large stands of high density in low-lying, tidal areas near the sea and in wet places near rivers, seldom occurring inland and then in wet places near streams or rivers." [Unlikely, given wet habitat]

409	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Tolerates shade."
409	2013. PACSOA. Palms: Euterpe oleracea. Palm and Cycad Society of Australia, http://www.pacsoa.org.au/palms/Euterpe/oleracea.html [Accessed 07 Mar 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Will take full sun as it matures, but only if there is high humidity."
409	2013. Palmpedia. Euterpe oleracea. http://www.palmpedia.net/wiki/Euterpe_oleracea [Accessed 07 Mar 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It requires a hot, moist climate with part shade. It will take full sun as it matures and frost should be avoided."
409	2013. Raintree Tropical Plant Database. Database File for: ACAI (Euterpe oleracea). http://www.rain-tree.com/acai.htm#.UTkxJFetrPA [Accessed 07 Mar 2013]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "In its natural habitat under the shady rainforest canopy, the acai tree grows slowly in low light, often taking 4-5 years before producing fruit."
410	2003. EcoPort (Contributor: FAO). Euterpe oleracea. http://ecoport.org [Accessed 07 Mar 2013]	[Tolerates a wide range of soil conditions? Yes] "Soil - Physical: It is not particular to soil type, prefers deep soils but can grow on shallow ground and is found in periodically waterlogged situations. Chemical: Reported soil pH range for growth is 4.5-6.5 with the optimum between 5-5.5. It requires fertile soil and will withstand some salinity."
411	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Climbing or smothering growth habit? No] "E. oleracea is a monoecious, multi-stemmed (to 25 stems per clump) feather palm 3-20 m tall and 7-18 cm diameter."
412	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Forms dense thickets? Yes] "It grows in large stands of high density in low-lying, tidal areas near the sea and in wet places near rivers, seldom occurring inland and then in wet places near streams or rivers."
412	2003. Moegenburg S.M./Levey, D.J.. Do Frugivores Respond to Fruit Harvest? An Experimental Study of Short-Term Responses. Ecology. 84(10): 2600-2612.	[Forms dense thickets? Yes] "Across ~10000 km ² of floodplain forests in the Amazon River estuary, it forms monodominant stands, some of which are the result of its management (Calzavara 1972, Peters et al. 1989, Kahn 1991)."
501	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Aquatic? No] "Nevertheless, E. oleracea grows in inundated places, whereas E. precatoria grows on noninundated soils." ... "Euterpe oleracea can be an aggressive colonizer of disturbed, swampy areas" [Not truly aquatic]
502	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Arecaceae
503	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Arecaceae
504	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "E. oleracea is a monoecious, multi-stemmed (to 25 stems per clump) feather palm 3-20 m tall and 7-18 cm diameter."
601	1995. Jardim, M.A.G./Kageyama, P.Y.. Fenologia de floracao e frutificacao em populacao natural de acaizeiro (Euterpe oleracea Mart.) no estuario amazonico. Boletim do Museu Paraense Emilio Goeldi Serie Botanica. 10(1): 77-82.	[Evidence of substantial reproductive failure in native habitat? No] "Abstract: This study examines aspects of flowering and fruiting of a natural population of the acai palm (Euterpe oleracea Mart.) in the Amazon estuary. Fieldwork was carried on Combu Island, municipality of Acara, State of Para, Brazil, during two years (1988-1989). E. oleracea flowers principally from February until May and fruits mainly between June and December."
601	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Evidence of substantial reproductive failure in native habitat? No. although habitat may be dwindling] "Euterpe oleracea can be an aggressive colonizer of disturbed, swampy areas. Despite this, the habitat of the species is threatened by rice cultivation and shrimp farming in coastal Colombia."
602	1986. FAO. Food and fruit-bearing forest species 3: Examples from Latin America. Food & Agriculture Organisation of the United Nations, Rome, Italy	[Produces viable seed? Yes] "The most common method of propagation is by seeds although separating side-shoots may give results."
603	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Hybridizes naturally? Unknown if natural hybrids occur] "Euterpe edulis was for many years the most important species for the extraction of palm heart and was the industry standard." ... "Hybrids have been made between this species and E. oleracea (Bovi et al., 1987)."
604	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Self-compatible or apomictic? Yes] "Euterpe oleracea is monoecious; each inflorescence produces numerous, small, sessile staminate and pistillate flowers. Staminate flowers mature before the pistillate flowers, thus promoting outbreeding. However, a variable amount of self-pollination can occur depending on the synchronization between inflorescences on the same or different stems."

605	1986. Henderson, A.. A Review of Pollination Studies in the Palmae. Botanical Review. 52: 221-259.	[Requires specialist pollinators? No] "Euterpe oleracea Mart. is monoecious, protandrous, and has unisexual flowers in triads" ... "Staminate flowers were visited by bees which collected nectar, and in doing so became covered in pollen. The same bees also visited pistillate flowers and collected the nectar-like substance."
605	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Requires specialist pollinators? No] "In a review of pollination in Palmae, Henderson (1986) reported Euterpe oleracea to be protandrous, to have diurnal anthesis, and to produce nectar in pistillate flowers. Pollination was thought to be probably by bees" ... "More recently, Jardim (1991) reported that near Belem in Brazil, Euterpe oleracea flowered all year round..." ... "Insect visitors included 11 species of Coleoptera, three species of Diptera, one species of Homoptera, and four species of Hymenoptera."
605	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Requires specialist pollinators? No] "The pollinators are predominantly small bees and flies, as well as beetles."
606	2013. WRA Specialist. Personal Communication.	[Reproduction by vegetative fragmentation? No evidence] The species is known to sucker, however no evidence of spread by vegetative fragmentation.
607	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Minimum generative time (years)? 4+] "The palms can achieve reproductive maturity in as few as 4 years under excellent conditions. Individuals growing under the forest canopy take longer to start flowering."
701	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No evidence] "Seed dispersal over short distances is by rodents. Long-distance seed dispersal is accomplished by birds (Zimmermann, 1991) and passively by water."
702	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Propagules dispersed intentionally by people? Yes] "The traditional economic importance of açai in the Lower Amazon was for its fruit pulp that is made into a popular and nutritious beverage. In the 1970s it also became a major commercial source of palm heart. Fruit and palm hearts are derived from natural stands of the palm, which are under a low level of management in some areas (Tabora et al., 1993). Because of its clustering growth habit, E. oleracea has strong potential for sustainably managed fruit and palm heart production, and as an agroforestry species. It is also an attractive and popular ornamental."
703	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Propagules likely to disperse as a produce contaminant? No evidence] Seed dispersal over short distances is by rodents. Long-distance seed dispersal is accomplished by birds (Zimmermann, 1991) and passively by water."
703	2013. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No evidence] Probably not - seeds relatively large and no evidence that the species occurs or is grown in or around seed crops.
704	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Propagules adapted to wind dispersal? No] "...fruits globose or depressed globose, 1-2 cm diam., the stigmatic remains lateral; epicarp purple-black, black, or green, minutely tuberculate; seeds globose; endosperm deeply ruminant; eophyll bifid."
705	1996. Henderson, A./Galeano, G.. Euterpe, Prestoea, and Neonicholsonia (Palmae). Flora Neotropica. 72: 1-89.	[Propagules water dispersed? Yes] "It grows in large stands of high density in low lying, tidal areas near the sea and in wet places near rivers, seldom occurring inland and then in wet places near streams or rivers." [Likely, given natural distribution]
705	2002. Moegenburg, S.M.. Spatial and Temporal Variation in Hydrochory in Amazonian Floodplain Forest. Biotropica. 34(4): 606-612.	[Propagules water dispersed? Yes, but only with increasing water depth] "...neither the fruits nor seeds of E. oleracea float." ... "Water depth also predicted dispersal of non-buoyant E. oleracea seeds. The logistic regression model predicted that 50 percent of E. oleracea seeds would disperse only with 100 cm water. The predicted depth for 25 percent dispersal was 75.2 cm. These depths occur only during the new and full moons. At these times the seeds are likely dragged along the forest floor during the rising and falling tides."
705	2003. Moegenburg, S.. The Functions of Hooked Fibers on Euterpe Endocarps. Palms. 47(1): 16-20.	[Propagules water dispersed? Yes] "Although E. oleracea seeds do not float, fibers do allow seeds to sink more slowly through the water column. This may aid dispersal if water currents carry seeds away from the point at which they entered the water. The slower sinking of E. oleracea seeds with fibers may result from fibers increasing drag in the water, or from fibers trapping air bubbles as seeds enter the water."
705	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Propagules water dispersed? Yes] "This palm occurs in low-lying coastal areas and along rivers and streams in sites subject to periodic flooding." [Likely, given natural distribution]

706	2003. Moegenburg S.M./Levey, D.J.. Do Frugivores Respond to Fruit Harvest? An Experimental Study of Short-Term Responses. Ecology. 84(10): 2600-2612.	[Propagules bird dispersed? Yes] "Of the birds most sensitive to <i>E. oleracea</i> fruit harvest, at least one (Scarlet Macaw, <i>Ara macao</i>) is considered vulnerable to extinction (Parker et al. 1996). Several other rare species also rely on <i>E. oleracea</i> fruit. The Golden Parakeet (<i>Guarouba guarouba</i>), for example, favors the fruits from <i>E. oleracea</i> (Sick 1993) and is one of the most threatened psittacids in the Brazilian Amazon (Oren and Novaes 1986)."
706	2003. Moegenburg, S.. The Functions of Hooked Fibers on <i>Euterpe Endocarps</i> . Palms. 47(1): 16-20.	[Propagules bird dispersed? Yes] "The small size of <i>E. oleracea</i> fruits (ca. 1 cm diameter) makes them available for consumption by a wide variety of birds and mammals, which may deposit seeds in suitable establishment sites (Moegenburg 2000)."
707	2003. Moegenburg, S.. The Functions of Hooked Fibers on <i>Euterpe Endocarps</i> . Palms. 47(1): 16-20.	[Propagules dispersed by other animals (externally)? No. Hooked fibers serve other functions] "In this paper, the endocarps of <i>Euterpe oleracea</i> are shown to be covered with hooked fibers. The author speculates that these hooks have multiple functions, including dispersal and protection." ... "Experimental results supported three of the four hypotheses, suggesting that the fibers covering <i>E. oleracea</i> seeds serve multiple functions. In these experiments, fibers made seeds more buoyant in the water column, helped anchor dispersed seeds on the ground, and protected young roots. On the other hand, fibers did not protect dispersed seeds from insect predators."
708	2003. Moegenburg S.M./Levey, D.J.. Do Frugivores Respond to Fruit Harvest? An Experimental Study of Short-Term Responses. Ecology. 84(10): 2600-2612.	[Propagules survive passage through the gut? Yes] "Five species of mammals known to eat <i>E. oleracea</i> fruit were observed in the plots: Guianan squirrel (<i>Sciurus aestuans</i>), South American coati (<i>Nasua nasua</i>), brown capuchin monkey (<i>Cebus apella</i>), red-handed howler monkey (<i>Alouatta belzebul</i>), and golden-handed tamarin (<i>Saquinus midas</i>)." ... "Ingestion of fruit by dispersers is also important for <i>E. oleracea</i> because lack of dispersal results in high mortality from insect seed consumers near parent plants (S. Moegenburg, unpublished data)."
708	2004. Gayot, M./Henry, O./Dubost, G./Sabatier, D.. Comparative Diet of the Two Forest Cervids of the Genus <i>Mazama</i> in French Guiana. Journal of Tropical Ecology. 20(1): 31-43.	[Propagules survive passage through the gut? Not with the cervids in this study] "Thus, most very common species, like <i>Euterpe oleracea</i> , <i>Oenocarpus bacaba</i> and <i>Virola surinamensis</i> are eaten in large amounts by the two cervids, but their seeds are destroyed."
708	2007. Correa, S.B./Winemiller, K.O./Lopez-Fernandez, H./Galetti, M.. Evolutionary Perspectives on Seed Consumption and Dispersal by Fishes. Bioscience. 57(9): 748-756.	[Propagules survive passage through the gut? Yes] "Fishes probably were the first vertebrate seed dispersers, yet little research has examined this phenomenon." ... "The relative weight represented by seeds varied among seasons and plant species; for instance, palm seeds (<i>Euterpe oleracea</i>) accounted for 59% of total food mass during the dry season, whereas during the wet season they accounted for only 2% of the mass in gut contents."
801	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Prolific seed production (>1000/m ²)? No] "The fruit is a 2 cm diameter drupe that is purplish at maturity..." ... The maximum number of fruit clusters per plant is about eight, although three or four is typical." [Probably not - relatively large seeds]
802	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Evidence that a persistent propagule bank is formed (>1 yr)? Probably No] "- Seed storage recalcitrant"
802	2008. Janick, J./Paull, R.E.. The Encyclopedia of Fruit & Nuts. Cabi Publishing, Wallingford, UK	[Evidence that a persistent propagule bank is formed (>1 yr) No] "Assai seeds are recalcitrant and sensitive to both dehydration and low temperature during storage (Araujo and de Silva, 1994). Refrigeration will kill the seeds." ... "Seed stored for 15 days had 33.3% moisture content and 79% germination (Araujo and de Silva, 1994). After 2 months of storage germination was reduced to 28%, and to 8% after 7 months. Seed usually germinates in 4-8 weeks, but germination may continue for nearly a year (Bovi and Castro, 1993)."
803	2013. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "- Ability to sucker; regenerate rapidly"
804	2013. Raintree Tropical Plant Database. Database File for: ACAI (<i>Euterpe oleracea</i>). http://www.rain-tree.com/acai.htm#.UTkxJFetrPA [Accessed 07 Mar 2013]	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Unlike it's cousin, when one of acai's stems is cut, more stems will grow back on the same root system and the cutting of some of the stems encourages fruiting on the remaining stems."
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Naturalizing outside of a botanical garden in Panama (within native range)
- Thrives in tropical climates
- Shade tolerant
- Tolerates many soil conditions (and potentially able to exploit many different habitat types)
- Forms dense & extensive stands
- Self-compatible
- Fruits consumed & seeds dispersed by birds and mammals
- Seeds also water dispersed
- Produces suckers & resprouts after cutting

Low Risk / Desirable Traits

- No negative impacts have been documented
- Unarmed (no spines, thorns or burrs)
- Non-toxic
- Commercially valuable fruit (edible & source of juice)
- Landscaping and ornamental value
- Reaches reproductive maturity in 4+ years
- Will not form a persistent seed bank