

## A review of the conservation status of West Indian palms (Arecaceae)

Scott Zona, Raúl Verdecia, Angela Leiva Sánchez, Carl E. Lewis and Mike Maunder

**Appendix** The 134 taxa of West Indian palms with their distribution by island or island group, the two previous conservation assessments, current global Red List status, and this assessment and the rationale for categorization.

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>								1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale	
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA							
<b><i>Acoelorraphe</i></b>														
<i>A. wrightii</i> (Griseb. & H. Wendl.) H. Wendl. ex Becc.	X						X	nt		nt		Not listed	LC	Widespread
<b><i>Acrocomia</i></b>														
<i>A. aculeata</i> (Jacq.) Lodd. ex Mart.	X	X	X	X	X			nt		Not listed		Not listed	LC	Widespread
<i>A. crispa</i> (Kunth) Baker ex Becc.	X							nt		nt		Not listed	LC	Widespread
<b><i>Aiphanes</i></b>														
<i>A. minima</i> (Gaertn.) Burret		X		X	X			Not listed		Not listed		Not listed	LC	Widespread
<b><i>Attalea</i></b>														
<i>A. crassispatha</i> (Mart.) Burret		X						Not listed		E		CR D	CR D	<50 adults remain
<b><i>Bactris</i></b>														
<i>B. cubensis</i> Burret	X							nt		Not listed		Not listed	LC	Widespread
<i>B. jamaicana</i> L. H. Bailey			X					R		Not listed		VU A2c	DD	Scattered populations persist in fields
<i>B. plumeriana</i> Mart.		X						I		Not listed		Not listed	LC	Widespread
<b><i>Calyptrotroma</i></b>														
<i>C. occidentalis</i> (Sw.) H. E. Moore			X					nt-R-K		Not listed		Not listed	LC	Widespread
<i>C. plumeriana</i> (Mart.) Lourteig	X	X						R		Not listed		Not listed	LC	Widespread
<i>C. rivalis</i> (O. F. Cook) L. H. Bailey		X		X				V		V		Not listed	LC	Widespread
<b><i>Coccothrinax</i></b>														
<i>C. acunana</i> León	X							K		Not listed		Not listed	VU D2	Endemic to Pico Turquino at 1,000 m; small area but remote
<i>C. alexandri</i> León ssp. <i>alexandri</i>	X							nt		Not listed		Not listed	VU B2 a+b(i,ii,iii)	Narrow coastal endemic at Baracoa; climate change a threat
<i>C. alexandri</i> León ssp. <i>nitida</i> (León) Borhidi & Muñiz	X							K		Not listed		Not listed	EN B2 a+b(iii)	Endemic to vicinity of Imías; subject to human disturbance
<i>C. argentata</i> (Jacq.) L. H. Bailey							X	nt-R		Not listed		Not listed	DD	
<i>C. argentea</i> (Lodd. ex J. A. & J. H. Schultes) Sarg. ex Becc.		X						nt		Not listed		Not listed	LC	Widespread
<i>C. baracoensis</i> Borhidi & Muñiz	X							R		Not listed		Not listed	DD	

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>							1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA					
<i>C. barbadensis</i> (Lodd. ex Mart.) Becc.		X	X		?-nt			Not listed	Not listed	DD		
<i>C. bermudezii</i> León	X				K			Not listed	Not listed	EN B2 a+b(iii)	Endemic to vicinity of Baracoa; subject to human disturbance	
<i>C. borhidiana</i> Muñiz	X				E			E	CR B1+2c	CR B2 a+b(iii)	Endemic to vicinity of Matanzas; subject to human disturbance	
<i>C. boschiana</i> Mejía & García		X				Not listed		Not listed	Not listed	VU D2	Endemic to coast of Azua; 1 population, not protected	
<i>C. camagueyana</i> Borhidi & Muñiz	X				R			Not listed	Not listed	CR B2a+b(iii)	Small population in Cerro Tuabaquey	
<i>C. clarenensis</i> León ssp. <i>clarenensis</i>	X				nt			Not listed	Not listed	LC	Large populations	
<i>C. clarenensis</i> León ssp. <i>brevifolia</i> (León) Borhidi & Muñiz	X				R			Not listed	Not listed	DD	Small population, endemic to Cerro Jabosí	
<i>C. clarenensis</i> León ssp. <i>perrigida</i> (León) Borhidi & Muñiz	X				Not listed			Not listed	Not listed	DD		
<i>C. concolor</i> Burret		X			?			Not listed	Not listed	DD		
<i>C. crinita</i> (Griseb. & H. Wendl.) Becc. ssp. <i>crinita</i>	X				E			E	Not listed	CR A2c+d; B1a+b(iii)	Only 61 adults remain; heavily disturbed	
<i>C. crinita</i> (Griseb. & H. Wendl.) Becc. ssp. <i>brevicrinis</i> Borhidi & Muñiz	X				R			R	Not listed	EN A2c+d	Small area; overexploitation	
<i>C. cupularis</i> (Griseb. & H. Wendl. ex Wright) Becc.					nt			Not listed	Not listed	DD		
<i>C. ekmanii</i> Burret		X			?			Not listed	DD	DD		
<i>C. elegans</i> Muñiz & Borhidi	X				nt			Not listed	Not listed	LC	Common on mogotes of S Maestra	
<i>C. fagildei</i> Borhidi & Muñiz	X				R			Not listed	Not listed	VU D2	Few plants in small area	
<i>C. fragrans</i> Burret	X				K			Not listed	Not listed	DD		
<i>C. garciana</i> León	X				nt			Not listed	Not listed	VU B2a+b(ii,iii,iv)	Holguin serpentine endemic	
<i>C. gracilis</i> Burret		X			?			Not listed	Not listed	DD		
<i>C. guantanamensis</i> (León) Muñiz & Borhidi	X				K			Not listed	Not listed	LC	Large populations, some probably protected in naval base	
<i>C. gundlachii</i> León	X				nt			Not listed	Not listed	LC	Large populations between Granma & Santiago	
<i>C. hiorami</i> León	X				nt			Not listed	Not listed	LC	Large populations	

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>							1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA					
<i>C. inaguensis</i> Read				X	R			R (includes <i>C. victorinii</i> )	DD	DD		
<i>C. jamaicensis</i> Read			X		nt			Not listed	Not listed	LC		Widespread
<i>C. leonis</i> Muñiz & Borhidi	X				K			Not listed	Not listed	EN B1b(i,ii,iii)		Endemic to Meseta del Guaso
<i>C. litoralis</i> León	X				nt			Not listed	Not listed	LC		Widespread in some central areas
<i>C. macroglossa</i> (León) Muñiz & Borhidi	X				nt			Not listed	Not listed	LC		Widespread in some areas
<i>C. microphylla</i> Borhidi & Muñiz	X				K			Not listed	Not listed	VU D2		Small population in Abra de Mariana
<i>C. miraguama</i> (Kunth) Becc. ssp. <i>miraguama</i>	X				nt			Not listed	Not listed	LC		Widespread
<i>C. miraguama</i> (Kunth) Becc. ssp. <i>arenicola</i> (León) Borhidi & Muñiz	X				nt			Not listed	Not listed	LC		Widespread in Isla de la Juventud & Pinar del Río
<i>C. miraguama</i> (Kunth) Becc. ssp. <i>havanensis</i> (León) Borhidi & Muñiz	X				K			Not listed	Not listed	VU D2		Overexploitation of small populations
<i>C. miraguama</i> (Kunth) Becc. ssp. <i>roseocarpa</i> (León) Borhidi & Muñiz	X				nt			Not listed	Not listed	LC		Widespread
<i>C. moaensis</i> (Borhidi & Muñiz)	X				nt			Not listed	Not listed	EN B2a+b(iii)		Small population; threatened by mining
<i>C. montana</i> Burret		X			I			Not listed	Not listed	DD		
<i>C. munizii</i> Borhidi	X				nt			Not listed	Not listed	LC		Large populations
<i>C. muricata</i> León	X				nt			Not listed	Not listed	LC		In well conserved areas in Najasa & Cubitas
<i>C. nipensis</i> Borhidi & Muñiz	X				r			Not listed	Not listed	VU B1b(ii,iii,v)		Endemic to N of Sierra Nipe
<i>C. orientalis</i> (León) Muñiz & Borhidi	X				nt			Not listed	Not listed	LC		Two populations in Sierras Nipe & Moa
<i>C. pauciramosa</i> Burret	X			X	E			I (included <i>C. nipensis</i> )	VU B1+2e	VU B1b(ii,iii,v)		Endemic to Sierra de Nipe
<i>C. proctorii</i> Read				X	?			Not listed	Not listed	DD		
<i>C. pseudorigida</i> León	X				R			Not listed	Not listed	EN B1ab(iii)+2ab(iii)		Endemic to vicinity of city of Camagüey
<i>C. pumila</i> Borhidi & J. A. Hernández	X				Not listed			Not listed	Not listed	DD		
<i>C. rigida</i> (Griseb. & H. Wendl.) Becc.	X				K			Not listed	Not listed	DD		Serpentine endemic in Sierra Nipe
<i>C. salvatoris</i> León ssp. <i>salvatoris</i>	X				nt			Not listed	Not listed	LC		Widespread

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>							1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA					
<i>C. salvatoris</i> León ssp. <i>loricata</i> (León) Borhidi & Muñiz	X							K	Not listed	Not listed	EN C2 a(i)	Two small populations in Cerro Romano & near Banes
<i>C. saxicola</i> León		X						nt	Not listed	Not listed	LC	Large population in protected area
<i>C. scoparia</i> Becc.		X						Not listed	Not listed	Not listed	DD	
<i>C. spissa</i> L. H. Bailey		X						nt	Not listed	Not listed	DD	
<i>C. trinitensis</i> Borhidi & Muñiz	X							nt	Not listed	Not listed	DD	
<i>C. victorini</i> León	X							E	Not listed	Not listed	CR C2 a(i)	Two small populations
<i>C. yunquensis</i> Borhidi & Muñiz	X							R	Not listed	Not listed	VU D1	Endemic to small plateau
<i>C. yuraguana</i> (A. Rich.) León	X							nt	Not listed	Not listed	LC	Widespread in Pinar del Río
<b>Colpothrinax</b>												
<i>C. wrightii</i> Griseb. & H. Wendl. ex Voss	X							V	V	VU B1+2e	EN A2a+c+d	Exploitation for thatch
<b>Copernicia</b>												
<i>C. baileyana</i> León	X							nt	Not listed	Not listed	LC	Widespread from Sancti Spiritus to Holguin
<i>C. berteroana</i> Becc.		X						I	I	Not listed	DD	
<i>C. brittoniorum</i> León	X							R	R	VU B1+2e	CR B2a+b(ii,iii,v)	Two populations with few adults
<i>C. cowellii</i> Britt. & Wilson	X							nt	Not listed	Not listed	EN B1 b(ii,iii,v)	Restricted to serpentine of Camagüey
<i>C. curbeloi</i> León	X							R	Not listed	Not listed	VU A2a+c+d	Small populations
<i>C. curtissii</i> Becc.	X							nt	Not listed	Not listed	LC	Widespread
<i>C. ekmanii</i> Burret		X						E	E	EN C1	EN B2a+b(iii)	Area <500 km <sup>2</sup> ; few populations; degraded
<i>C. fallaensis</i> León	X							R	Not listed	Not listed	CR A 2a+c+d	High level of exploitation for fibre
<i>C. gigas</i> Ekman ex Burret	X							R	Not listed	VU B1+2e	VU A2c+d	Exploitation for thatch
<i>C. glabrescens</i> H. Wendl. ex Becc. var. <i>glabrescens</i>	X							nt	Not listed	Not listed	LC	Widespread
<i>C. glabrescens</i> H. Wendl. ex Becc. var. <i>ramosissima</i> (Burret) Muñiz & Borhidi	X							Not listed	Not listed	Not listed	VU C2a(i)	Small populations
<i>C. hospita</i> Mart.	X							nt	Not listed	Not listed	LC	Widespread in central areas
<i>C. humicola</i> León	X							E	Not listed	Not listed	DD	
<i>C. longiglossa</i> León	X							I	Not listed	Not listed	DD	

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>							1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA					
<i>C. macroglossa</i> H. Wend. ex Becc.	X							nt	Not listed	Not listed	LC	Widespread in some central areas
<i>C. molineti</i> León	X							K	Not listed	Not listed	DD	
<i>C. rigida</i> Britt. & Wilson	X							nt	Not listed	Not listed	LC	Widespread from Sancti Spiritus to near Baracoa
<i>C. roigii</i> León	X							R	Not listed	Not listed	LC	Widespread in some central areas
<i>C. yarey</i> Burret var. <i>yarey</i>	X							nt	Not listed	Not listed	LC	Widespread in Las Tunas, Holguin & Granma
<i>C. yarey</i> Burret var. <i>robusta</i> León	X							Not listed	Not listed	Not listed	VU A2a+c	Overexploitation for thatch
<i>C. x burretiana</i> León	X							Not listed	Not listed	Not listed	CR B2b(i,ii,iii,v)	Very few
<i>C. x occidentalis</i> León	X							Not listed	Not listed	Not listed	CR D	Very few
<i>C. x shaferi</i> Dahlgren & Glassm.	X							Not listed	Not listed	Not listed	CR D	Uncommon
<i>C. x sueroana</i> León	X							Not listed	Not listed	Not listed	EN C2 a(i)	Populations with few plants
<i>C. x textilis</i> León	X							Not listed	Not listed	Not listed	EN C2 a(i)	Small populations
<i>C. x vespertilionum</i> León	X							Not listed	Not listed	Not listed	EN C2 a(i)	Populations with few plants
<b>Desmoncus</b>												
<i>D. polyacanthos</i> Mart.					X			?-nt	Not listed	Not listed	EN B2a+b(iii)	Only on St Vincent
<b>Euterpe</b>												
<i>E. broadwayi</i> Becc. ex Broadway					X			?	Unknown	Not listed	LC	Common & widespread
<b>Gaussia</b>												
<i>G. attenuata</i> (O. F. Cook) Becc.	X	X						I	E	VU B1+2c	LC	Common on mogotes; protected in Cambalache State Forest
<i>G. princeps</i> H. Wendl.	X							nt	Not listed	Not listed	LC	Common on mogotes; protected
<i>G. spirituana</i> Moya & Leiva	X							Not listed	Not listed	EN C2a D	EN D	<250 individuals
<b>Geonoma</b>												
<i>G. interrupta</i> (Ruiz & Pavon) Mart.var. <i>interrupta</i>	X		X					nt	Not listed	Not listed	LC	Widespread
<i>G. undata</i> Klotzsch			X					?-nt	Not listed	Not listed	DD	Montane; Guadalupe, Martinique, Dominica
<b>Hemithrinax</b>												
<i>H. compacta</i> (Griseb. & H.Wendl.) Hooker f.	X							I	Not listed	Not listed	VU D1	Remote populations
<i>H. rivularis</i> Léon var. <i>rivularis</i>	X							V	V	Not listed	EN B2a+b(iii)	Mining & degradation of Moa

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>								1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale	
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA							
<i>T. rivularis</i> León var. <i>savanarum</i> (León) O. Muñiz	X							V	V	Not listed	EN B2a+b(iii)	Mining & degradation of Moa		
<i>Prestoea</i>														
<i>P. acuminata</i> (Willd.) H. E. Moore var. <i>montana</i> (Graham) Henderson & Galeano	X	X	X	X				nt	Not listed	Not listed	LC	Widespread		
<i>Pseudophoenix</i>														
<i>P. ekmanii</i> Burret		X						R	E	CR B1+2c	VU C1	10% estimated decline from harvesting over next century		
<i>P. lediniana</i> Read		X						V	V	CR D	CR D	<50 individuals		
<i>P. sargentii</i> H. Wendl. ex Sarg.	X	X	X	X		X	E-V-nt		R	Not listed	LC	Widespread		
<i>P. vinifera</i> (Mart.) Becc.	X						nt		Not listed	Not listed	VU C1	10% estimated decline from harvesting over next century		
<i>Reinhardtia</i>														
<i>R. paiewonskiana</i> Read, Zanoni & Mejía	X							E	Not listed	Not listed	EN D	<250 individuals		
<i>Roystonea</i>														
<i>R. altissima</i> (Mill.) L. H. Bailey		X						nt	Not listed	Not listed	LC	Widespread		
<i>R. borinquena</i> O. F. Cook	X		X					nt	Not listed	Not listed	LC	Widespread		
<i>R. lenis</i> León	X							nt	Not listed	VU D1+2	VU D1	<1,000 individuals		
<i>R. maisiana</i> (L. H. Bailey) Zona	X				X			Not listed	Not listed	Not listed	VU D1	<1,000 individuals		
<i>R. oleracea</i> (Jacq.) O. F. Cook					X			nt	Not listed	Not listed	LC	Abundant		
<i>R. princeps</i> (Becc.) Burret		X			X			nt	Not listed	LR/nt	LC	Protected; swamp dweller		
<i>R. regia</i> (Kunth) O. F. Cook	X				X	X		nt	Not listed	Not listed	LC	Widespread		
<i>R. stellata</i> León	X					I		Ex/E	EN D	EX		Repeated searches did not relocate it		
<i>R. violacea</i> León	X					I		R	Not listed	EN D		<250 individuals		
<i>Sabal</i>														
<i>S. causiarum</i> (O. F. Cook) Becc.		X	X			K		Not listed	Not listed	LC		Widespread		
<i>S. domingensis</i> Becc.	X	X				nt		Not listed	Not listed	LC		Widespread		
<i>S. maritima</i> (Kunth) Burret	X		X			nt (as <i>S. jamaicensis</i> )		Not listed	Not listed	LC		Widespread		
<i>S. palmetto</i> (Walt.) Lodd. ex J. A. & J. H. Schultes	X			X		X	nt	Not listed	Not listed	LC		Widespread		
<i>S. yapa</i> Wright ex Becc.	X						nt	Not listed	Not listed	LC		Widespread		
<i>Syagrus</i>														
<i>S. amara</i> (Jacq.) Mart.				X		R		Not listed	Not listed	LC		Widespread		
<i>Thrinax</i>														
<i>T. ekmaniana</i> (Burret) Borhidi & Muñiz	X					E		E	CR B1+2e	VU D2		Single protected population in mogotes		

## Appendix (Continued)

Taxon (alphabetically by genera)	Island or island group <sup>1</sup>							1988 Red List status <sup>2,3</sup>	1996 Red List status <sup>2,4</sup>	2006 Red List status & criteria <sup>5,6</sup>	This Red List assessment & criteria <sup>5,7</sup>	Rationale
	Cuba	HISP	JAM	PR & VI	LA	CAY	BA					
<i>T. excelsa</i> Lodd. ex Griseb.		X						nt	Not listed	Not listed	LC	Estimated area of occurrence <900 km <sup>2</sup> ; montane
<i>T. morrisii</i> H. Wendl.	X	X	X	X	X	X	nt	Not listed	Not listed	LC	Widespread	
<i>T. parviflora</i> Sw. ssp. <i>parviflora</i>			X					nt	Not listed	Not listed	LC	Widespread
<i>T. parviflora</i> Sw. ssp. <i>puberula</i> Read			X					nt	Not listed	Not listed	LC	Widespread
<i>T. radiata</i> Ledd. ex J. A. & J. H. Schultes	X	X	X			X	?-nt		Not listed	Not listed	LC	Widespread
<b>Zombia</b>												
<i>Z. antillarum</i> L. H. Bailey var. <i>antillarum</i>		X						?	Not listed	nt	VU C1	10% estimated decline from harvesting over next century
<i>Z. antillarum</i> L. H. Bailey var. <i>gonzalezii</i> Jiménez		X						Not listed	Not listed	Not listed	DD	Taxonomic uncertainty

<sup>1</sup>HISP, Hispaniola; JAM, Jamaica; PR & VI, Puerto Rico & the Virgin Islands; LA, Lesser Antilles; CAY, Cayman Islands; BA, Bahama Archipelago (including the Turks & Caicos Islands)

<sup>2</sup>E, endangered; V, vulnerable; R, rare; I, indeterminate; ?, status unknown; K, insufficiently known; nt, not threatened

<sup>3</sup>Regional assessment of Dransfield *et al.* (1988)

<sup>4</sup>Global assessment of Johnson & the IUCN/SSC Palm Specialist Group (1996)

<sup>5</sup>EX, Extinct; CR, Critically Endangered; EN, Endangered; VU, Vulnerable; LR/nt, Lower Risk: near threatened; LC, Least Concern; DD, Data Deficient

<sup>6</sup>Assessments (IUCN, 2006) use version 2.3 of the IUCN Red List Categories & Criteria (IUCN, 1994)

<sup>7</sup>Using version 3.1 of the IUCN Red List Categories & Criteria (IUCN, 2001)