

1           **Holocene changes in African vegetation: tradeoff between**  
2                                   **climate and water availability**

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11 **Table S1. Characteristics of the West African sites from which fossil pollen assemblages have been extracted (African Pollen Database)**

Site ID	Site Name	Latitude (°N)	Longitude (°E)	Elevation (m asl)	Country	Time range (yr BP)	References
1	AMEKNI	22.7850	5.5183	1000	Algeria	7663	(Guinet and Planque, 1969)
2	TAESSA	23.1667	5.5167	2150	Algeria	4919 - 5661	(Ballouche et al., 1995; Thinon et al., 1996)
3	BILGOY [ENNERI DIRENNAO]	21.5183	17.1717	1135	Chad	8381	(Schulz, 1973, 1980)
4	KAMALA	14.0333	16.3167	420	Chad	11784	(Maley, 1981)
5	KOUKA	13.1000	15.6333	283	Chad	11002	(Maley, 1981)
6	MANDI	13.3833	14.7500	276	Chad	11352	(Maley, 1981)
7	MOUSKORBE	21.5833	18.8833	2600	Chad	7473 - 9443	(Maley, 1981)
8	KA26	22.7333	16.6217	N/A	Chad	1780	(Schulz, 1980)
9	TARSO YEGA	20.6667	17.5833	2200	Chad	7718	(Maley, 1981)
10	TJERI	13.7333	16.5000	275	Chad	565 - 10094	(Maley, 1981, 2004)
11	TJOLUMI	21.5167	18.1333	1115	Chad	6647	(Schulz, 1973, 1980)
12	TROU AU NATRON	21.0500	16.7500	1850	Chad	18188	(Maley, 1981)
13	BAIESAINT JEAN	19.4707	-16.3012	0	Mauritania	1778 - 3635	(Lézine, A.M. unpub. Data)
14	CHEMCHANE 1	20.9333	-12.2167	256	Mauritania	7590 - 9131	(Lézine, 1987; Lézine et al., 1990; Lézine, 1993)
15	SEGUEDINE	20.1667	12.7833	412	Niger	8777	(Baumhauer and Schulz, 1984)
16	TERMIT	16.2000	11.0667	450	Niger	9981	(Schulz et al., 1995)
17	ARI KOUKOURI	13.9167	13.1000	270	Niger	5488 - 9617	(Schulz et al., 1995)
18	ARI KOUKOURI 85	13.9167	13.1000	270	Niger	7250	(Schulz et al., 1995)
19	ENNERI ACHELOUMA [Profil XII]	22.3500	12.7000	650	Niger	7806	(Schulz, 1980)
20	SETTAFET	25.3500	11.4333	1100	Libyan Arab Jamahiriya	4710	(Schulz, 1980)

21	UAN AFUDA CAVE	24.8678	10.5003	922	Libyan Arab Jamahiriya	8836 - 9835	(Mercuri, 1999)
22	UAN MUHUGGIAG	24.8387	10.5078	915	Libyan Arab Jamahiriya	4496 - 7758	(Mercuri et al., 1998)
23	UAN TABU	24.8558	10.5237	915	Libyan Arab Jamahiriya	4218 - 9933	(Mercuri and Trevisan Grandi, 2001)
24	SHATI	27.5000	13.8333	305	Libyan Arab Jamahiriya	6350	(Delibrias et al., 1982)
25	BAL	13.3042	10.9430	300	Nigeria	341 - 11905	(Salzmann and Waller, 1998; Salzmann, 1999)
26	KAIGAMA	13.2510	11.5675	330	Nigeria	3567 - 11112	(Salzmann, 1996; Salzmann and Waller, 1998)
27	KAJEMARUM	13.3030	11.0240	300	Nigeria	2845 - 11027	(Salzmann and Waller, 1998)
28	KULUWU	13.2170	11.5505	330	Nigeria	4703 - 11406	(Salzmann and Waller, 1998)
29	TILLA	10.3907	12.1245	690	Nigeria	248 - 13064	(Salzmann, 2000; Salzmann et al., 2002)
30	DIOGO 1	15.2667	-16.8000	8	Senegal	9990	(Lézine, 1987)
31	DIOGO 2	15.2667	-16.8000	8	Senegal	450 - 11412	(Lézine, 1988a)
32	GUIERS 02	16.1167	-15.9167	0	Senegal	162 - 6703	(Lézine, 1988b)
33	GUIERS 03	16.2833	-15.8333	1	Senegal	1121 - 6764	(Lézine, 1988b)
34	LOMPOUL	15.4167	-16.7167	3	Senegal	2008 - 10309	(Lézine, 1987, 1988a; Lézine and Chateaufneuf, 1991)

35	POTOU	15.1667	-16.8667	11	Senegal	193 - 11399	(Lézine, 1987, 1988a; Lézine and Chateaufneuf, 1991)
36	TIGUENT	17.25	-16.0166	N/A	Mauritania	3342	(Medus and Barbey, 1979)
37	KISSI (BS6)	14.6183	-0.1367	280	Burkina Faso	567	(Ballouche, 1998)
38	OURSI	14.6528	-0.4860	290	Burkina Faso	52 - 3265	(Ballouche and Neumann, 1995)
39	BIR ATRUN	18.1667	26.6500	600	Sudan	6469 - 10229	(Ritchie, 1987; Ritchie and Haynes, 1987)
40	EL ATRUN	18.0167	27.1500	600	Sudan	10334	(Jahns, 1995)
41	OYO	19.2560	26.1747	510	Sudan	5187 - 10363	(Ritchie et al., 1985; Ritchie, 1994)
42	SELIMA	21.3667	29.3060	270	Sudan	7643 - 11021	(Ritchie and Haynes, 1987; Haynes et al., 1989)
43	THIAYE	14.9167	-17.5000	1	Senegal	5593 - 6371	(Lézine et al., 1985; Lézine, 1987)
44	GABRONG [ENNERI DIRENNAO] (GABR)	21.5000	17.1167	1115	Chad	8945	(Schulz, 1980)
45	TARSO YEGA GAVRILOVIC (GAVR 1)	20.6667	17.5000	2000	Chad	8930	(Schulz, 1980)
46	ENNERI BARDAGUE [JAMT36]	21.4167	16.9167	N/A	Chad	9294	(Schulz, 1980)
47	YEBBI [GRA]	20.8667	18.0383	1440	Chad	9136	(Schulz, 1980)
48	YOA	19.05	20.5166	380	Chad	0 - 6034	(Kröpelin et al., 2008; Lézine, 2009)

12 **Table S2. Classification of pollen taxa into Saharan Sahelian, Sudanian, and/or Guineo-**  
 13 **Congolian groups according to the phytogeographical affinities of the species they**  
 14 **represent. A pollen taxon is considered as exclusive to a given group when it presents**  
 15 **phytogeographical affinities with only this group. The taxa nomenclature is from the**  
 16 **African Pollen Database (Vincens et al., 2007) and respects the original determination**  
 17 **provided by authors.**

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Taxon Name [APD]	Guineo-Congolian	Sudanian	Sahelian	Saharan
Acanthus-type	x			
Afraegle-type paniculata	x			
Ammannia-type	x			
Anthocleista	x			
Anthostema-type	x			
Anthostema-type senegalense	x			
Brachystegia	x			
Caesalpinia-type	x			
Chrysobalanus icaco/Parinari	x			
Connaraceae undiff.	x			
Dodonaea	x			
Dodonaea viscosa-type	x			
Dombeya-type buettneri	x			
Dombeya-type quinqueseta	x			
Elaeis guineensis	x			
Eremospatha	x			
Erythrococca-type africana	x			
Garcinia	x			
Harungana	x			
Harungana madagascariensis-type	x			
Hewittia-type scandens	x			
Landolphia-type	x			
Lophira alata-type	x			
Mallotus-type	x			
Meliaceae undiff.	x			
Millettia-type	x			
Myrianthus-type	x			
Myrianthus-type serratus	x			
Naucleae undiff.	x			
Nauclea-type	x			
Pancovia-type	x			
Pancovia-type bijuga	x			
Sorindeia-type juglandifolia	x			
Thunbergia	x			

Treculia	x			
Treculia africana-type	x			
Trema-type orientalis	x			
Vitellaria-type paradoxa	x			
Vitex-type	x			
Acalypha	x	x		
Adansonia digitata	x	x		
Azelia africana-type	x	x		
Alchornea	x	x		
Alchornea cordifolia-type	x	x		
Anacardiaceae undiff.	x	x		
Annonaceae undiff.	x	x		
Antidesma-type	x	x		
Antidesma-type venosum	x	x		
Aphania-type senegalensis	x	x		
Araliaceae undiff.	x	x		
Blighia	x	x		
Blighia sapida-type	x	x		
Bombax	x	x		
Bridelia ferruginea-type	x	x		
Bridelia micrantha-type	x	x		
Bridelia-type	x	x		
Bridelia-type scleroneura	x	x		
Burkea africana	x	x		
Caperonia	x	x		
Caperonia serrata-type	x	x		
Cardiospermum halicacabum-type	x	x		
Catunaregam-type nilotica	x	x		
Ceiba pentandra	x	x		
Cissampelos-type	x	x		
Clusiaceae undiff.	x	x		
Cochlospermum	x	x		
Cola cordifolia-type	x	x		
Combretaceae undiff.	x	x		
Cordia africana-type	x	x		
Cynometra-type	x	x		
Desmodium	x	x		
Detarium	x	x		
Dialium	x	x		
Dialium guineense-type	x	x		
Diospyros	x	x		

Dombeya-type	x	x		
Erythrococca-type	x	x		
Eugenia-type	x	x		
Gardenia-type	x	x		
Gardenia-type imperialis	x	x		
Haematostaphis-type barteri	x	x		
Hallea-type	x	x		
Hallea-type stipulosa	x	x		
Irvingiaceae undiff.	x	x		
Ixora-type	x	x		
Ixora-type brachypoda	x	x		
Jasminum	x	x		
Khaya-type	x	x		
Lophira	x	x		
Macaranga-type	x	x		
Manilkara-type	x	x		
Monechma-type ciliatum	x	x		
Monotes kerstingii-type	x	x		
Mussaenda	x	x		
Ormocarpum-type	x	x		
Parinari-type	x	x		
Parkia	x	x		
Paullinia pinnata	x	x		
Pseudospondias-type microcarpa	x	x		
Raphia	x	x		
Salacia senegalensis-type	x	x		
Schrebera arborea-type	x	x		
Stereospermum-type	x	x		
Syzygium-type	x	x		
Syzygium-type guineense	x	x		
Tabernaemontana	x	x		
Teclea-type	x	x		
Tetracera	x	x		
Tetracera alnifolia-type	x	x		
Uapaca	x	x		
Verbenaceae undiff.	x	x		
Vitex-type doniana	x	x		
Ximenia	x	x		
Ximenia americana-type	x	x		
Zanthoxylum-type	x	x		
Zanthoxylum-type zanthoxyloides	x	x		

Albizia-type	x	x	x	
Allophylus	x	x	x	
Allophylus africanus-type	x	x	x	
Celtis	x	x	x	
Combretum-type	x	x	x	
Dalechampia	x	x	x	
Dichrostachys	x	x	x	
Gnidia-type	x	x	x	
Hemizygia bracteosa-type	x	x	x	
Hymenocardia	x	x	x	
Hymenocardia acida-type	x	x	x	
Mitragyna-type inermis	x	x	x	
Morelia senegalensis	x	x	x	
Musanga-type	x	x	x	
Piliostigma reticulatum-type	x	x	x	
Pseudocedrela kotschyi	x	x	x	
Pterocarpus-type	x	x	x	
Sapindaceae undiff.	x	x	x	
Tapinanthus-type	x	x	x	
Acanthaceae undiff.	x	x	x	x
Apocynaceae undiff.	x	x	x	x
Asteraceae undiff.	x	x	x	x
Caesalpiniaceae undiff.	x	x	x	x
Campanulaceae undiff.	x	x	x	x
Euphorbiaceae undiff.	x	x	x	x
Farsetia	x	x	x	x
Lippia-type	x	x	x	x
Mimosaceae undiff.	x	x	x	x
Moraceae undiff.	x	x	x	x
Myrtaceae undiff.	x	x	x	x
Phoenix	x	x	x	x
Phoenix reclinata-type	x	x	x	x
Rubiaceae undiff.	x	x	x	x
Rutaceae undiff.	x	x	x	x
Sapotaceae undiff.	x	x	x	x
Acalypha ciliata-type		x		
Acalypha crenata-type		x		
Adansonia		x		
Alysicarpus		x		
Basilicum-type polystachyon		x		
Borassus/Hyphaene		x		



Capparis tomentosa-type		x		
Cayratia-type		x		
Cissus		x		
Clerodendrum		x		
Combretum-type molle		x		
Crossopteryx febrifuga		x		
Cussonia		x		
Entada/Prosopis		x		
Entada-type		x		
Eriosema-type		x		
Flueggea virosa-type		x		
Hygrophila		x		
Isoberlinia-type		x		
Kedrostis		x		
Lannea/Sclerocarya		x		
Maytenus		x		
Micrococca-type mercurialis		x		
Oxalis		x		
Pavetta		x		
Pentodon-type pentandrus		x		
Rhus-type longipes		x		
Salacia		x		
Sida		x		
Sopubia-type parviflora		x		
Spondias monbin-type		x		
Sterculia-type		x		
Sterculia-type setigera		x		
Strychnos		x		
Tacazzea-type apiculata		x		
Tacca leontopetaloides		x		
Vernonia perrottetii-type		x		
Vernonia-type galamensis		x		
Vigna-type		x		
Zornia		x		
Acacia ehrenbergiana-type		x	x	
Acacia gummifera-type		x	x	
Acacia nilotica-type		x	x	
Acacia polyacantha-type		x	x	
Acacia senegal-type		x	x	
Acacia tortilis-type		x	x	
Adenium obesum-type		x	x	

Aeschynomene		x	x	
Asystasia gangetica-type		x	x	
Bauhinia		x	x	
Bauhinia rufescens-type		x	x	
Boscia-type angustifolia		x	x	
Boscia-type senegalensis		x	x	
Boswellia-type		x	x	
Capparis fascicularis-type		x	x	
Capparis sepiaria-type		x	x	
Carissa edulis-type		x	x	
Cassia-type occidentalis		x	x	
Celosia argentea-type		x	x	
Celosia-type		x	x	
Celosia-type trigyna		x	x	
Celtis toka-type		x	x	
Centaurea-type perrottetii		x	x	
Cissampelos-type mucronata		x	x	
Combretaceae/Melastomataceae undiff.		x	x	
Combretum-type aculeatum		x	x	
Combretum-type glutinosum		x	x	
Combretum-type paniculatum		x	x	
Commiphora		x	x	
Commiphora africana-type		x	x	
Cordia		x	x	
Cynoglossum-type		x	x	
Dichrostachys cinerea-type		x	x	
Erythrina		x	x	
Flueggea		x	x	
Gomphrena		x	x	
Indeterminable		x	x	
Justicia striata-type		x	x	
Justicia-type flava		x	x	
Lannea-type		x	x	
Lannea-type acida		x	x	
Lobelia		x	x	
Maytenus senegalensis-type		x	x	
Mitracarpus villosus		x	x	
Ocimum-type		x	x	
Phyllanthus-type		x	x	
Phyllanthus-type amarus		x	x	
Phyllanthus-type fraternus		x	x	

Phyllanthus-type maderaspatensis		x	x	
Phyllanthus-type reticulatus		x	x	
Piliostigma		x	x	
Pluchea		x	x	
Prosopis-type africana		x	x	
Spermacoce-type		x	x	
Spermacoce-type chaetocephala		x	x	
Spermacoce-type radiata		x	x	
Triumfetta-type		x	x	
Waltheria		x	x	
Acacia		x	x	x
Acacia seyal-type		x	x	x
Achyranthes-type aspera		x	x	x
Amaranthaceae undiff.		x	x	x
Amaranthaceae/Chenopodiaceae undiff.		x	x	x
Apiaceae undiff.		x	x	x
Asclepiadaceae undiff.		x	x	x
Asparagus		x	x	x
Balanites		x	x	x
Balanites aegyptiaca-type		x	x	x
Barleria		x	x	x
Blepharis-type		x	x	x
Boerhavia-type		x	x	x
Boscia-type		x	x	x
Boscia-type salicifolia		x	x	x
Cadaba-type		x	x	x
Cadaba-type farinosa		x	x	x
Cadaba-type glandulosa		x	x	x
Capparidaceae undiff.		x	x	x
Capparis		x	x	x
Capparis decidua-type		x	x	x
Caryophyllaceae undiff.		x	x	x
Cassia-type		x	x	x
Celastraceae undiff.		x	x	x
Chenopodiaceae undiff.		x	x	x
Chenopodium-type		x	x	x
Chrozophora		x	x	x
Citrullus		x	x	x
Clematis-type		x	x	x
Clematis-type hirsuta		x	x	x
Cleome brachycarpa-type		x	x	x

Cleome-type		x	x	x
Cleome-type gynandra		x	x	x
Clutia		x	x	x
Coccinia		x	x	x
Cocculus		x	x	x
Cocculus pendulus-type		x	x	x
Commelinaceae undiff.		x	x	x
Commelina-type		x	x	x
Commelina-type benghalensis		x	x	x
Convolvulaceae undiff.		x	x	x
Convolvulus-type		x	x	x
Corchorus-type		x	x	x
Cotula-type anthemoides		x	x	x
Crassula		x	x	x
Crateva adansonii		x	x	x
Crotalaria		x	x	x
Croton/Jatropha		x	x	x
Croton-type		x	x	x
Cucumis		x	x	x
Cuscuta-type		x	x	x
Euphorbia-type		x	x	x
Faidherbia albida		x	x	x
Ficus		x	x	x
Gentianaceae undiff.		x	x	x
Geraniaceae undiff.		x	x	x
Grewia-type		x	x	x
Heliotropium		x	x	x
Heliotropium strigosum-type		x	x	x
Hibiscus		x	x	x
Hypericum		x	x	x
Hyphaene-type		x	x	x
Indigofera		x	x	x
Kohautia		x	x	x
Lamiaceae undiff.		x	x	x
Lotus arabicus-type		x	x	x
Maerua/Ritchiea		x	x	x
Maerua-type		x	x	x
Maerua-type crassifolia		x	x	x
Malvaceae undiff.		x	x	x
Menispermaceae undiff.		x	x	x
Mentha-type		x	x	x

Merremia-type		x	x	x
Monsonia		x	x	x
Nyctaginaceae undiff.		x	x	x
Oldenlandia-type		x	x	x
Palmae undiff.		x	x	x
Pavonia		x	x	x
Peristrophe-type		x	x	x
Poaceae undiff.		x	x	x
Polycarpaea-type		x	x	x
Polycarpon-type		x	x	x
Polycarpon-type prostratum		x	x	x
Ranunculaceae undiff.		x	x	x
Rhamnaceae undiff.		x	x	x
Rhus-type		x	x	x
Rhynchosia-type		x	x	x
Ricinus communis		x	x	x
Ruellia		x	x	x
Rumex		x	x	x
Salix		x	x	x
Salvadora		x	x	x
Salvadora persica-type		x	x	x
Salvadoraceae undiff.		x	x	x
Sesbania		x	x	x
Solanaceae undiff.		x	x	x
Solanum-type		x	x	x
Tamarindus-type indica		x	x	x
Tephrosia		x	x	x
Thymelaeaceae undiff.		x	x	x
Tiliaceae undiff.		x	x	x
Tinospora bakis-type		x	x	x
Trichodesma		x	x	x
Trichodesma africanum-type		x	x	x
Vahlia		x	x	x
Zygophyllaceae undiff.		x	x	x
Cayratia-type ibuensis			x	
Guiera senegalensis			x	
Lamiaceae type 6 (exine type Leucas)			x	
Saxifraga hederifolia			x	
Abutilon			x	x
Aerva-type javanica			x	x
Aerva-type lanata			x	x

Aizoaceae undiff.			X	X
Alternanthera			X	X
Ambrosia-type maritima			X	X
Arnebia hispidissima-type			X	X
Brassicaceae undiff.			X	X
Cassia-type italica			X	X
Centaurea-type senegalensis			X	X
Chascanum			X	X
Cichorieae undiff.			X	X
Cirsium			X	X
Cleome-type arabica			X	X
Cleome-type monophylla			X	X
Cleome-type scaposa			X	X
Commicarpus-type			X	X
Cynareae undiff.			X	X
Euphorbia-type hirta			X	X
Galium-type			X	X
Helichrysum-type			X	X
Hyphaene-type thebaica			X	X
Ipomoea-type			X	X
Lactuceae undiff.			X	X
Lathyrus/Vicia			X	X
Leucas-type			X	X
Limeum			X	X
Luffa-type			X	X
Lythraceae undiff.			X	X
Nucularia perrini			X	X
Phyla-type nodiflora			X	X
Plantago lanceolata-type			X	X
Polygala-type			X	X
Psilotrichum-type			X	X
Psoralea			X	X
Pulicaria			X	X
Resedaceae undiff.			X	X
Suaeda			X	X
Tamarix			X	X
Tamarix senegalensis-type			X	X
Tribulus			X	X
Tribulus terrestris-type			X	X
Veronica			X	X
Zygophyllum			X	X

Aerva-type				x
Aizoon canariense-type				x
Allium				x
Amaranthus-type				x
Anchusa-type				x
Anthyllis-type				x
Armeria-type				x
Artemisia				x
Asphodelus				x
Asphodelus-type tenuifolius				x
Astragalus-type				x
Atractylis-type				x
Boraginaceae undiff.				x
Calligonum polygonoides				x
Campanula-type				x
Carduus-type				x
Caylusea-type				x
Centaurea-type				x
Chrozophora brocchiana-type				x
Cistaceae undiff.				x
Cistanche				x
Cistus				x
Cleome-type brachycarpa				x
Cleome-type chrysantha				x
Cleome-type parvipetala				x
Commelina-type forskalaei				x
Corchorus-type fascicularis				x
Cornulaca monacantha-type				x
Cornulaca/Aerva				x
Cotula-type				x
Cressa-type cretica				x
Cucumis dispaceus-type				x
Cucurbitaceae undiff.				x
Cupressaceae undiff.				x
Cupressus-type				x
Cynomorium coccineum				x
Daucus-type				x
Echium				x
Echium plantagineum-type				x
Ephedra				x
Ephedra alata-type				x

Ephedra distachya-type				x
Ephedra fragilis-type				x
Ephedra major-type				x
Ericaceae undiff.				x
Erica-type				x
Erica-type arborea				x
Erodium				x
Fabaceae undiff.				x
Fagonia				x
Genista-type				x
Gisekia pharnacioides-type				x
Grewia-type villosa				x
Helianthemum				x
Hyosciamus muticus-type				x
Hyoscyamus				x
Hyoscyamus niger-type				x
Inula-type				x
Juncus				x
Knautia				x
Launaea-type taraxacifolia				x
Lavandula-type				x
Leguminosae undiff.				x
Limeum viscosum-type				x
Limonium-type				x
Limonium-type humile				x
Lotus				x
Medicago laciniata				x
Moltkiopsis ciliata				x
Myrtus-type				x
Myrtus-type nivellei				x
Nerium oleander				x
Neurada procumbens				x
Nitraria retusa				x
Olea				x
Olea europaea-type				x
Olea lapperrinei-type				x
Oleaceae undiff.				x
Ornithogalum-type				x
Orobanche aegyptiaca-type				x
Pancratium-type				x
Panicum				x

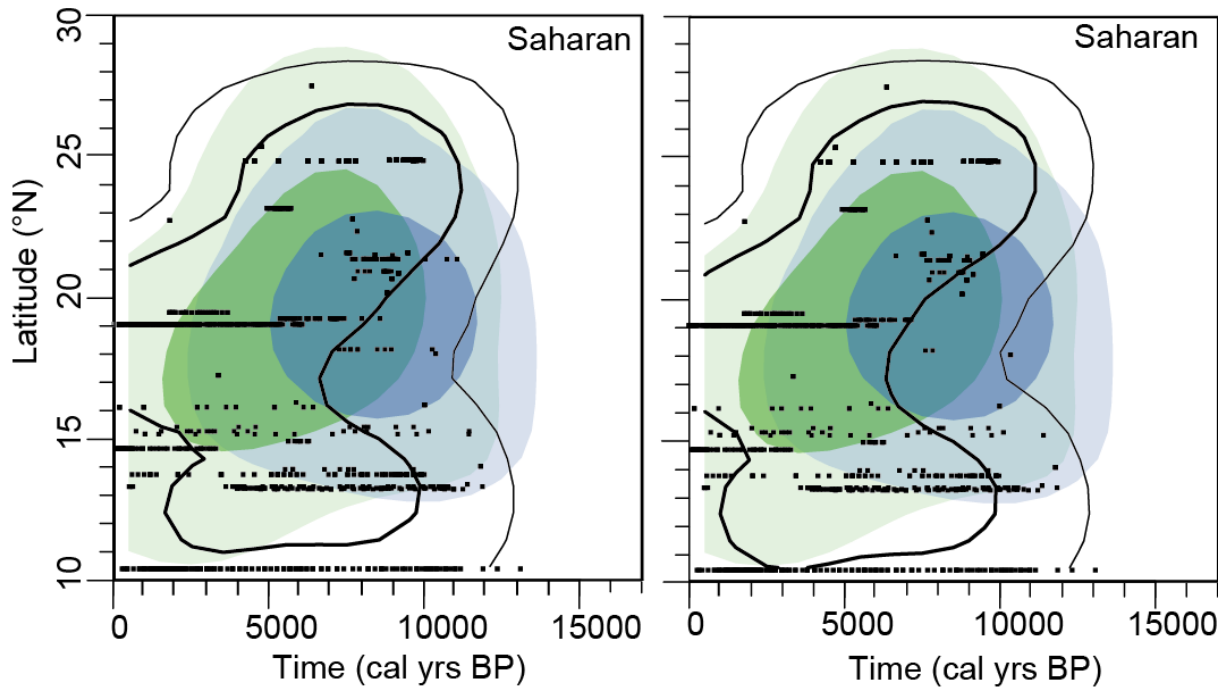


Paronychia				X
Peganum				X
Pentzia monodiana-type				X
Peristrophe-type paniculata				X
Pistacia				X
Pistacia atlantica-type				X
Plantago				X
Plantago afra-type				X
Plantago amplexicaulis-type				X
Plantago ciliata-type				X
Plumbaginaceae undiff.				X
Polygonaceae undiff.				X
Polygonum persicaria-type				X
Polygonum plebeium-type				X
Ranunculus-type				X
Rhamnus-type				X
Rhus-type tripartita				X
Rosaceae undiff.				X
Rumex vesicarius-type				X
Ruta montana-type				X
Salix ledermannii-type				X
Sclerocephalus arabicus				X
Scrophulariaceae undiff.				X
Scrophularia-type arguta				X
Silene-type				X
Silene-type lynesii				X
Solanum-type nigrum				X
Spergula-type				X
Teucrium				X
Urticaceae undiff.				X
Warionia-type				X
Zaleya-type pentandra				X
Zilla spinosa				X
Ziziphus-type				X
Ziziphus-type mauritiana				X

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24 **Figure S1. Spatio-temporal changes (in latitude and millennia) in pollen taxa presences**  
 25 **within the Saharan group during the Holocene** using probability density functions (Kühl et  
 26 al., 2002). As for Figure 1 in the main text, the left panel reports spatio-temporal distribution  
 27 based on non-exclusive taxa, while the right one reports distributions computed with only  
 28 exclusive taxa. Bold line in each graph stands for the 0.5 isoprobability delineating the core  
 29 zone in which 50% of the samples are the most concentrated (maximum presence).  
 30 Similarly, thin line is the 0.85 isoprobability line delineating the maximum extent zone in  
 31 which 85% of the samples are included (Lézine et al., 2011). Black dots are representative of  
 32 pollen samples referenced in latitude and time. Blue and green probability density functions  
 33 refer to lacustrine and palustrine distributions through time, respectively, with dark areas  
 34 reflecting core zones (0.5 isoprobability computed on paleohydrological data), while light  
 35 areas refer to the maximum extent (Lézine et al., 2011).

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