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**Supplementary information for:**

**Mid-late Holocene vegetation response to climatic drivers and biotic disturbances in the Banni grasslands of western India**

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**Table. S1 Dataset for Chachi and Luna cores**

Chachi	Depth range (cm)	Age (cal yr BP)	$\delta^{13}\text{C}_{\text{org}}$ (‰)	$\delta^{18}\text{O}_{\text{shell}}$ (‰)	CHAR ( $\text{cm}^{-2}\text{yr}^{-1}$ )	Herbivore dung fungal spore (relative abundance)	TOC (%)	$P_{\text{aq}}$
Ca1	0-8	0	-22.25	-1.60	3.34	0.112	0.76	0.17
Ca2	8-15	432	-23.45	-2.12	2.06	0.212	1.3	0.07
Ca3	15-20	859	-20.25	-1.95	3.53	0.086	0.47	n.a.
Ca4	20-25	1164	-20.25	-0.83	5.66	0.290	0.39	0.24
Ca5	25-30	1468	-20.40	-0.22	3.20	0.025	0.39	n.a.

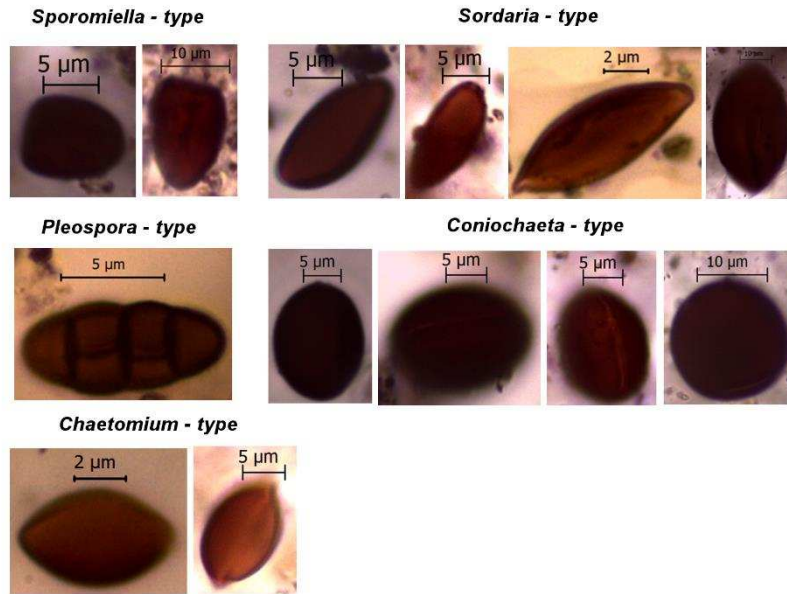
Ca6	30-35	1522	-20.95	*n.a.	6.14	0.453	0.4	n.a.
Ca7	35-40	1576	-21.20	n.a.	6.15	0.103	0.35	n.a.
Ca8	40-45	1630	- 21.55	+2.49	5.51	0.028	0.34	0.20
Ca9	45-50	1684	-22.00	-1.35	4.42	0.021	0.3	n.a.
Ca10	50-55	1738	-22.45	-1.1	4.76	0.036	0.28	n.a.
Ca11	55-60	1792	-23.40	n.a.	5.02	0.045	0.28	n.a.
Ca12	60-65	1846	-23.25	-0.68	3.59	0.127	0.26	0.18
Ca13	65-70	1952	-23.70	n.a.	3.00	0.040	0.3	n.a.
Ca14	70-74	2058	-24.70	n.a.	6.42	0.069	0.3	n.a.
Ca15	74-78	2143	-24.25	n.a.	3.70	0.024	0.28	0.10
Ca16	78-82	2227	-21.40	n.a.	2.43	0.038	0.29	n.a.
Ca17	82-86	2312	-23.50	-0.93	2.49	0.088	0.26	0.33
Ca18	86-90	2397	-21.70	-1.19	2.92	0.029	0.28	n.a.
Ca19	90-94	2482	-23.05	-0.29	3.04	0.038	0.24	0.18
Ca20	94- 100	2588	-32.30	-2.08	2.15	0.013	0.29	0.21
Ca21	100- 104	2694	-24.65	-1.25	2.86	0.032	0.32	0.22
Ca22	104- 108	2779	-21.75	n.a.	1.66	0.020	0.26	0.09
Ca23	108- 112	2864	-22.45	-5.32	1.36	0.015	0.24	0.16
Ca24	112- 116	3093	-23.45	n.a.	1.54	0.009	0.22	0.22
Ca25	116- 120	3322	-24.20	-3.48	0.88	0.042	0.22	0.11
Ca26	120- 126	3551	-29.85	-3.67	1.71	0.024	0.25	0.10
Ca27	126- 130	3894	-21.80	-3.65	2.00	0.012	0.23	0.15
Ca28	130- 134	4123	-22.25	-2.64	1.47	0.018	0.22	n.a.
Ca29	134- 138	4353	-22.75	-2.07	2.55	0.024	0.22	n.a.
Ca30	138- 142	4582	-22.65	-2.53	3.19	0.009	0.25	0.28

S1(A)  $\delta^{13}\text{C}_{\text{Org}}$  (‰),  $\delta^{18}\text{O}_{\text{shell}}$  (‰) values of gastropod shell *Cerithium* sp., CHAR ( $\text{cm}^{-2}\text{yr}^{-1}$ ), herbivore dung fungal spore (relative abundance) , Total organic carbon (TOC, %) and  $P_{\text{aq}}$  values in Chachi core.

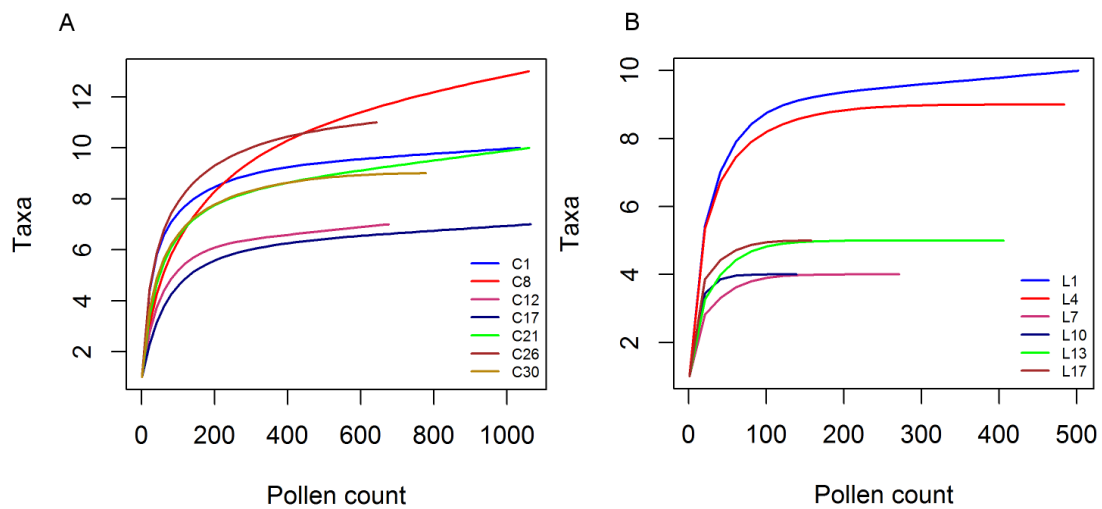
\*: not available.

S1(B)  $\delta^{13}\text{C}_{\text{Org}}$  (‰), CHAR ( $\text{cm}^{-2}\text{yr}^{-1}$ ), herbivore dung fungal spore (relative abundance) and Total organic carbon (TOC, %) in Luna core

Luna	Depth range (cm)	Age (cal yr BP)	$\delta^{13}\text{C}_{\text{Org}}$ (‰)	CHAR ( $\text{cm}^{-2}\text{yr}^{-1}$ )	Herbivore dung fungal spore (relative abundance)	TOC (%)
Lb1	0-6	0	-19.95	2.67	0.152	0.8
Lb2	6-12	109	-19.25	3.61	0.053	0.61
Lb3	12-18	274	-20.90	1.69	0.104	0.99
Lb4	18-24	438	-20.15	1.32	0.096	0.73
Lb5	24-30	603	-18.55	0.89	0.030	0.55
Lb6	30-36	670	-17.55	0.85	0.055	0.52
Lb7	36-42	737	-17.85	1.42	0.120	0.53
Lb8	42-48	804	-17.75	1.27	0.143	0.53
Lb9	48-54	871	-17.75	2.29	0.069	0.5
Lb10	54-60	937	-17.10	5.18	0.085	0.49
Lb11	60-65	951	-17.20	11.47	0.049	0.45
Lb12	65-70	962	-17.00	7.97	0.125	0.43
Lb13	70-75	973	-17.45	11.47	0.030	0.49
Lb14	75-80	984	-17.65	14.06	0.106	0.46
Lb15	80-85	995	-17.60	34.78	0.091	0.38



**Fig. S1** Images of common coprophilous fungal spore types recorded from the sediment profiles.



**Fig. S2** Pollen rarefaction curves at some of the depths for Chachi (A) and Luna (B) cores. C1, C8, C12, C17, C21, C26, C30 are the rarefaction plots for Chachi and L1, L4, L7, L10, L13, L17 are that for Luna.