

Table S1 Matrix of the mesological data of the studied stations (with Alt: altitude; Quot: the Emberger quotient; M_m: thermal amplitude; Km_S: kilometers at the source; Slope: the mean slope; Temp: temperature; pH: hydrogen potential; Con: conductivity; DO: dissolved oxygen; Vel: current velocity; Bio_fl: bioclimatic floors).

	GPS coordinates		Alt (m)	Quot	M_m °C	Km_S	Slope	Temp °C			pH			Cond (µs/cm)			DO (mg/l)			Vel			Bio_fl			
	X : Latitude	Y : Longitude						C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3	C1	C2	C3				
S1	33.911166666667	-4.044638888889	931	3	60	25	1	0	1	9	11	15	7	7.1	7.2	319	321	329	9.82	8.75	7.59	1	1	1	6	Subhumid-W.C
S2	33.983058333333	-3.871055555556	630	2	44	29	2	23	1	12	14	17	7.1	7.1	7.2	337	341	344	8.55	8.45	8.40	2	2	2	5	Semi-arid-W.C
S3	34.039111111111	-3.776138888889	600	2	30	29	2	34	2	12	15	18	6.9	7	7.1	345	347	351	8.25	8.21	8.12	2	2	2	5	Semi-arid-W.C
S4	33.712013888889	-3.834952777778	1531	4	60	24	1	0	3	11	13	17	7.4	7.3	7.4	435	440	445	9.60	8.37	8.35	2	2	2	6	Subhumid-W.C
S5	33.816166666667	-3.785388888889	950	3	37	33	3	16	3	14	19	22	7.5	7.4	7.5	552	555	557	7.80	7.21	7.20	3	3	2	5	Semi-arid-W.C
S6	34.026833333333	-3.760722222222	625	2	30	33	3	43	3	18	22	24	7.6	7.5	7.3	900	912	921	7.81	7.80	7.11	4	4	3	2	Arid-W.F
S7	34.050625000000	-3.776138888889	560	1	28	33	3	40	2	19	23	25	6.9	7.1	7.2	321	333	345	7.85	7.55	7.45	3	3	3	2	Arid-W.F
S8	34.087708333333	-3.720750000000	529	1	26	33	3	47	2	21	24	25	7	7	7.1	377	380	387	7.75	7.40	7.21	2	2	2	2	Arid-W.F
S9	34.172611111111	-3.557055555556	455	1	23	33	3	70	1	22	24	25	7.6	7.7	7.5	527	531	540	7.22	7.15	7.12	1	1	1	1	Arid-W.T
S10	34.214861111111	-3.392805555556	377	1	18	33	3	92	1	21	24	26	7.8	7.7	7.6	876	877	880	7.10	6.40	5.21	1	1	1	1	Arid-W.T
S11	34.216986111111	-3.344555555556	361	1	16	33	3	97	1	22	25	26	8.1	7.9	7.7	925	931	933	6.65	6.45	5.55	1	1	1	1	Arid-W.T

C : campaign ; W : winter ; C : cold ; F : fresh ; T : temperate

The parameters of the average slope, the thermal amplitude and the bioclimatic stages were transformed into modalities:

- The mean slope (in ‰): 1 =PM<110; 2 = 110<PM <220; 3 =PM>220;
- Thermal amplitude M-m: 1 =M-m<25 °C; 2 = 25<Mm< 35 °C; 3 =M-m>35 °C;
- Bioclimatic floors: 1: Saharian with cold winter; 2: arid with cold winter; 3: arid with temperate winter; 4: semiarid with cold winter; 5: semi-arid with temperate winter; 6: semi-arid with warm winter; 7: sub-humid with cold winter; 8: humid with cold winter;
- Current velocity: this component of the field, well known for its selective action on stands, was quantified by its average value at three different point of the same sampling site. In the absence of a hydrometric reel to measure the velocity of the current, we have estimated it by means of a stopwatch at various points of the stream, by measuring the time taken by a floating body to traverse a given distance. The mean speed (converted to cm/s) was the subject of a semi-quantitative estimation, followed by a transformation into four modalities: 1 = very low current at standing waters<5 cm/s; 2=weak current 5<2<25 cm/s; 3 = average current<3<50 cm/s; 4 = fast current>50 cm/s.

