

Supplementary Table 1: Overview of temperature (T), specific conductivity (SpC), dissolved oxygen (DO), pH, community respiration (R) and primary production (P) for the different sampling sites during the wet season sampling campaign of 2012. SD represent standard deviation.

River	Station ID	Date	Lat.	Long.	Altitude	Distance from source	Catchment area	T	SpC	DO	pH	R±SD	P±SD
			[DD]		[m]	[km]	[km ²]	[°C]	[μS cm ⁻¹]	[%]	[NBS]	[μmol L ⁻¹ h ⁻¹]	
Zambezi mainstem													
Zambezi River	ZBZ.1	13-Jan-13	-11.1220	24.1986	1223	75	729	22.5	19.5	93.6	5.91	0.29±0.04	0.8±0.1
Zambezi River	ZBZ.2	14-Jan-13	-13.1077	22.6890	1043	575	80346	26.5	10.8	90.5	5.54	0.46±0.02	8.2±1.2
Zambezi River	ZBZ.3	16-Jan-13	-14.3372	23.2359	1028	773	213627	26.2	94.3	85.9		0.58±0.09	17.7±0.9
Zambezi River	ZBZ.5	17-Jan-13	-16.2447	23.2388	1005	1085	309896	25.7		31.9		1.5±0.06	
Zambezi River	ZBZ.6	18-Jan-13	-17.4666	24.2470	939	1280	336405	26.8	72.0	93.7		0.79±0.11	66.6±0.4
Zambezi River	ZBZ.7	19-Jan-13	-17.7985	25.2807	924	1437	517757	26.8	77.4	63.5		0.67±0.07	62.4±1.7
Zambezi River	ZBZ.8	21-Jan-13	-17.8874	25.8426	889	1511	520912	27.5	78.2	94.9		0.78±0.04	
Zambezi River	ZBZ.9	21-Jan-13	-17.9311	25.8596	773	1518	521391	27.5					
Zambezi River	ZBZ.11	25-Jan-13	-16.0162	28.8798	371	2010	682655	26.6	85.1	75.9	7.42		15.7±0.5
Zambezi River	ZBZ.13	29-Jan-13	-15.6355	30.4034	327	2201	857673	29.9	122.1	96.8	7.76		68.6±2.6
Zambezi River	ZBZ.15	22-Feb-13	-16.1396	33.5408	124	2591	1106186	27.3	119.5	107.1	7.99	1.01±0.07	23.6±2.0
Zambezi River	ZBZ.17	24-Feb-13	-17.4594	35.0592	40	2841	1203346	30.7	135.6	81.5	7.53	0.76±0.07	34.9±2.1
Zambezi River	ZBZ.18	25-Feb-13	-17.8059	35.3995	25	2912	1368613	30.3	179.5	9.0	7.02	0.96±0.21	85.3±2.4
Zambezi River	ZBZ.19	2-Mar-13	-18.5792	36.2442	2	3050	1379213	30.0	144.5	72.3	7.31	0.52±0.04	38.2±1.3
Zambezi River	ZBZ.20	1-Mar-13	-18.5673	36.4453	0	3083	1379423	30.2	150.8	70.8	7.37	0.87±0.12	39.8±7.9
Tributaries													
Kafue River	KAF.1	8-Feb-13	-12.4643	27.8508	1258	159	5569	26.4	157.7	73.1	7.45	0.43±0.04	25.8±16.3
Kafue River	KAF.2	7-Feb-13	-12.6450	28.1645	1190	230	7012	26.9	178.8	101.2	7.58	0.33±0.07	13.8±2.7
Kafue River	KAF.3	3-Feb-13	-13.6423	27.7616	1129	492	22927	25.8	220.4	81.0	7.42	1.38±0.20	35.1±1.9
Kafue River	KAF.4	10-Feb-13	-14.5625	26.4577	1100	743	55017	26.6	167.4	77.3	7.18	0.61±0.04	23.5±0.7
Kafue River	KAF.5	11-Feb-13	-14.9449	25.9130	1075	882	95590	26.4	142.5	94.3	7.62	0.33±0.04	59.9±11.6
Kafue River	KAF.6	13-Feb-13	-15.7641	26.0304	998	1009	106434	25.8	160.4	130.0	8.06	1.55±0.19	24.8±0.6
Kafue River	KAF.8	15-Feb-13	-15.7465	27.8296	982	1317	148151	26.4	189.0	18.8	7.07	0.81±0.15	35.6±8.8
Kafue River	KAF.9	16-Feb-13	-15.8369	28.3282	979	1430	151896	26.2	194.2	17.0	7.16	0.63±0.06	29.0±1.9
Kafue River	KAF.10	17-Feb-13	-15.9462	28.8720	375	1521	155774	27.3	194.5	106.5	8.20	0.74±0.06	41.6±22.6
Kabompo River	KAB.1	12-Jan-13	-11.8886	25.2505	1317	59	1083	21.3	37.5	99.3	6.76	0.52±0.10	

Kabompo River	KAB.2	15-Jan-13	-14.0387	23.6290	1045	699	66513	25.1	165.4	85.8	7.48	0.43±0.04	15.9±1.2
Luangwa River	LUA.1	11-Mar-13	-10.2520	33.0221	778	104	3456	24.6	57.2	99.5	7.40	0.99±0.25	15.3±0.4
Luangwa River	LUA.2	27-Jan-13	-13.0979	31.7860	529	692	74498	28.4	172.5	94.4	8.01	1.49±0.17	22.0±4.6
Luangwa River	LUA.4	28-Jan-13	-15.0055	30.2155	369	1048	142795	29.5	90.4	98.6	7.63	0.88±0.04	10.2±1.7
Luangwa River	LUA.5	29-Jan-13	-15.6040	30.4103	327	1139	149697	30.3	100.2	101.7	7.71	0.57±0.05	13.6±3.5
Lunsewmfa River	LUNSE.1	2-Feb-13	-13.9320	29.1316	1064	217	5612	23.9	67.5	94.6	7.45	0.74±0.05	2.4±0.8
Lunsewmfa River	LUNSE.2	30-Jan-13	-14.7943	29.6292	440	393	25698	27.6	93.0	94.2	7.50	0.33±0.05	32.1±1.4
Lunga River	LUN.1	9-Feb-13	-12.2604	26.7923	1271	50	591	21.2	130.5	86.2	7.63	0.52±0.06	2.7±1.2
Lunga River	LUN.3	10-Feb-13	-13.9839	26.3469	1121	471	21530	24.9	162.2	81.0	7.75	0.48±0.02	12.6±0.6
Mazoe River	MAZ.	6-Mar-13	-16.5435	33.3806	169	348	33934	28.9	104.9	104.2	8.04	0.49±0.05	91.7±78.3
Shire River	SH.	26-Feb-13	-17.4584	35.3388	30	370	161885	29.7	174.5	6.3	6.87	0.93±0.04	75.2±5.1
Reservoirs													
Kariba	KAR.2	22-Jan-13	-17.2790	27.5348	488	1779	597346	30.7	82.8	106.8		0.47±0.11	9.6±0.3
Kariba	KAR.3	24-Jan-13	-16.5543	28.6837	488	1928	678367	28.1	94.9	101.0	8.47	0.77±0.11	23.6±0.3
Cabora Bassa	C.B.2	21-Feb-13	-15.5874	32.3754	317	2420	1065594	31.6	112.7	122.9	8.98	1.47±0.06	22.6±3.5
Cabora Bassa	C.B.3	20-Feb-13	-15.5567	32.6337	317	2449	1067073	30.6	112.7	125.5	9.07	0.96±0.20	26.6±1.8
Itezhi Tezhi	ITT.1	12-Feb-13	-15.6103	26.0147	1030	988	103613	25.9	151.6	89.6	7.79	0.37±0.10	54.3±19.5
Itezhi Tezhi	ITT.2	12-Feb-13	-15.7602	25.9888	1030	1004	104450	27.2	153.3	94.8	7.89	0.44±0.03	23.3±0.5
Itezhi Tezhi	ITT.3	13-Feb-13	-15.8125	25.9389	1030	1011	106424	25.9		90.6	8.30	0.42±0.20	69.0±4.1