



Supplementary Tables:

Table S1. The effects of water conditions in the previous years on gross primary productivity of vegetation under different water conditions in the current year.

GPP _n	3rd	2nd	1st	Current
0.3421	-1	0	0	-1
0.6219	-1	0	0	1
0.2567	-1	0	0	-2
0.6899	-1	0	0	2
0.4785	-1	0	0	0
0.1213	-1	0	0	-3
0.8688	-1	0	0	3
0.3000	1	0	0	-1
0.6786	1	0	0	1
0.412	1	0	0	-2
0.7542	1	0	0	2
0.4504	1	0	0	0
0.1772	1	0	0	-3
0.6707	1	0	0	3
0.4273	-2	0	0	-1
0.7946	-2	0	0	1
0.2328	-2	0	0	-2
0.6505	-2	0	0	2
0.5001	-2	0	0	0
0.1000	-2	0	0	-3
0.8202	-2	0	0	3
0.385	2	0	0	-1
0.3436	2	0	0	1
0.3528	2	0	0	-2
0.6776	2	0	0	2
0.4216	2	0	0	0
0.4718	2	0	0	-3
0.2990	0	0	0	-1
0.6406	0	0	0	1
0.2303	0	0	0	-2
0.7086	0	0	0	2
0.4746	0	0	0	0
0.1017	0	0	0	-3
0.7671	0	0	0	3
0.4531	-3	0	0	-1
0.6045	-3	0	0	1
0.5882	-3	0	0	2
0.4332	-3	0	0	0
0.3838	3	0	0	-1
0.8428	3	0	0	1
0.2637	3	0	0	-2
0.9338	3	0	0	2
0.3228	3	0	0	0
0.2060	0	-1	0	-1
0.6011	0	-1	0	1
0.1845	0	-1	0	-2
0.6866	0	-1	0	2
0.3936	0	-1	0	0
0.0785	0	-1	0	-3
0.8103	0	-1	0	3



0.3575	0	1	0	-1
0.7398	0	1	0	1
0.2250	0	1	0	-2
0.6299	0	1	0	2
0.4371	0	1	0	0
0.1628	0	1	0	-3
0.6269	0	1	0	3
0.3569	0	-2	0	-1
0.5219	0	-2	0	1
0.2219	0	-2	0	-2
0.7006	0	-2	0	2
0.4732	0	-2	0	0
0.1732	0	-2	0	-3
0.8489	0	-2	0	3
0.5219	0	2	0	-1
0.6970	0	2	0	1
0.4678	0	2	0	-2
0.6933	0	2	0	2
0.4921	0	2	0	0
0.3807	0	2	0	-3
0.9168	0	2	0	3
0.2990	0	0	0	-1
0.6406	0	0	0	1
0.2303	0	0	0	-2
0.7086	0	0	0	2
0.4746	0	0	0	0
0.1017	0	0	0	-3
0.7671	0	0	0	3
0.5585	0	-3	0	-1
0.5185	0	-3	0	1
0.4341	0	-3	0	0
0.3045	0	3	0	-1
0.6733	0	3	0	1
0.3385	0	3	0	-2
0.9230	0	3	0	2
0.4857	0	3	0	0
0.4011	0	3	0	-3
0.9124	0	3	0	3
0.2399	0	0	-1	-1
0.7088	0	0	-1	1
0.1187	0	0	-1	-2
0.5025	0	0	-1	2
0.4886	0	0	-1	0
0.0679	0	0	-1	-3
0.3570	0	0	-1	3
0.3965	0	0	1	-1
0.6895	0	0	1	1
0.3889	0	0	1	-2
0.8129	0	0	1	2
0.5083	0	0	1	0
0.3090	0	0	1	-3
0.8249	0	0	1	3
0.2459	0	0	-2	-1
0.5869	0	0	-2	1
0.2271	0	0	-2	-2
0.5476	0	0	-2	2



0.4796	0	0	-2	0
0.6343	0	0	-2	3
0.4811	0	0	2	-1
0.8107	0	0	2	1
0.4505	0	0	2	-2
0.8333	0	0	2	2
0.6071	0	0	2	0
0.2997	0	0	2	-3
0.8853	0	0	2	3
0.2990	0	0	0	-1
0.6406	0	0	0	1
0.2303	0	0	0	-2
0.7086	0	0	0	2
0.4746	0	0	0	0
0.1017	0	0	0	-3
0.7671	0	0	0	3
0.2195	0	0	-3	-1
0.7235	0	0	-3	1
0.2286	0	0	-3	-2
0.6759	0	0	-3	2
0.4563	0	0	-3	0
0.6385	0	0	-3	3
0.6451	0	0	3	-1
0.8466	0	0	3	1
0.8611	0	0	3	2
0.6601	0	0	3	0
0.8873	0	0	3	3

Note: The 2~5 columns represent different water deficit conditions combination of the current year and previous years. Column 1 shows the mean value of standardized GPP under different water deficit combinations. The numbers -3, -2, -1, 0, 1, 2, 3 in column 2~5 represent severe drought ($CWD_{anomaly} < -2SD$), moderate drought ($-2SD < CWD_{anomaly} < -1.5SD$), mild drought ($-1.5SD < CWD_{anomaly} < -SD$), normal ($-SD < CWD_{anomaly} < SD$), mild wet ($SD < CWD_{anomaly} < 1.5SD$), moderate wet ($1.5SD < CWD_{anomaly} < 2SD$) and severe wet ($CWD_{anomaly} > 2SD$), respectively.