

**Table S1** Site location and the hydrological station

Site name	Location	Altitude	Longitude	Hydrological station	LWL (m)	DLWL	HWL (m)	DHWL
Z1	Jiangjin	29.246077	106.250984	Taping	179.27	11 Feb. 2019	190.21	9 Aug. 2019
Z2	Jiangbei	29.573118	106.579674	Cuntan	161.04	8 May 2019	178.16	9 Aug. 2019
Z3	Changshou	29.812378	107.073555	Changshou	152.13	7 June 2019	175.41	27 Oct. 2019
Z4	Fuling	29.846245	107.481644	Qingxichang	148.34	7 June 2019	174.95	1 Nov. 2018
Z5	Fengdu	30.037449	107.867424	Gaojiazhen	147.17	7 June 2019	174.57	1 Nov. 2018
Z6	Zhongxian	30.305717	108.110085	Zhongxian	146.28	7 June 2019	174.94	1 Nov. 2018
Z7	Wanzhou	30.900988	108.505836	Wanxian	146.18	7 June 2019	175.13	1 Nov. 2018
Z8	Yunyang	30.940229	109.008026	Yunyang	145.80	7 June 2019	174.95	1 Nov. 2018
Z9	Fengjie	31.011332	109.450493	Fengjie	145.26	7 June 2019	174.62	1 Nov. 2018
Z10	Wushan	31.029572	109.742584	Wushan	145.17	7 June 2019	174.71	1 Nov. 2018
Z11	Badong	31.061711	110.395264	Badong	145.17	7 June 2019	174.97	1 Nov. 2018
Z12	Zigui	30.880036	110.910706	Sanxia	145.04	7 June 2019	175.01	1 Nov. 2018

LWL, The lowest water level; DLWL, Date of occurrence of lowest water level; HWL, The highest water level; DHWL, Date of occurrence of highest water level. The water level calculated for each site is from October 2018 through October 2019.

**Table S2** Plant functional traits and ecosystem processes and service

trait	description	Measurement scale	Ecosystem services
Reproductive traits			
Dispersal type	Three types according to van der Pijl [52]:1:anemochory; 2:endozoochory&exozoochory;3:ballistochory;myrmecochory;unassisted.	nominal	Regulating service
Vegetative traits			
Growth form	Two classes: Graminoids and Herbs	Nominal	Supporting service
Life cycle	Annual; Biennial and Perennial	Nominal	Supporting service
Max. height(m)	Five classes modified from Hodgson et al. [53]: 1:<0.1m;2:0.11-0.29m;3:0.30-0.59m;4:0.600.99m;5:1.0-3.0m	Ordinal	Supporting service
Phenological traits			
Flowering phenology	Five classes according to Mabry et al. [54]:1:spring flowering; 2:mid-summer flowering;3:spring-mid-summer flowering;4:fall flowering;5:mid-summer-fall flowering	Nominal	Regulating service