

Supplementary materials are listed as follows to support the main text:

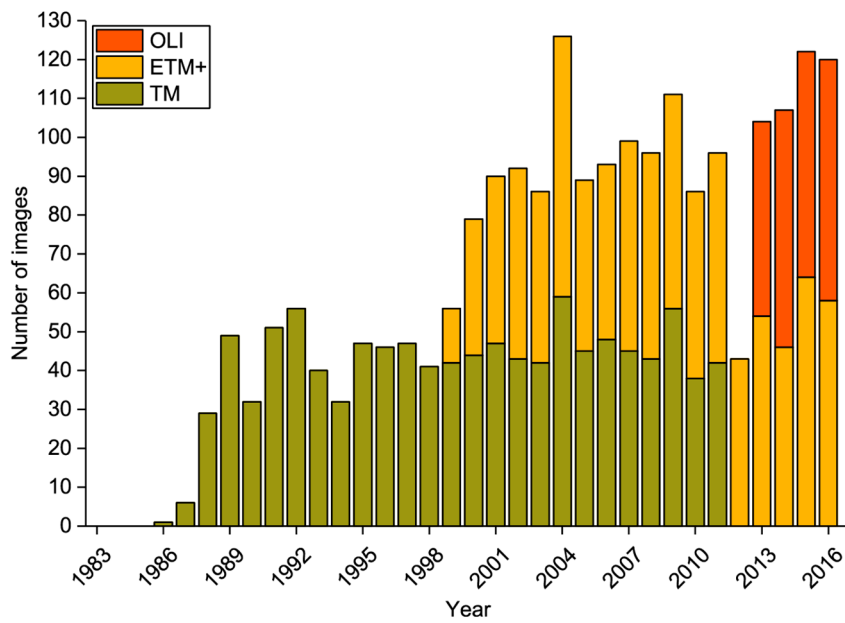


Figure S1. Number of Landsat TM/ETM+/OLI SR images at the study area in each year from 1984 to 2016.

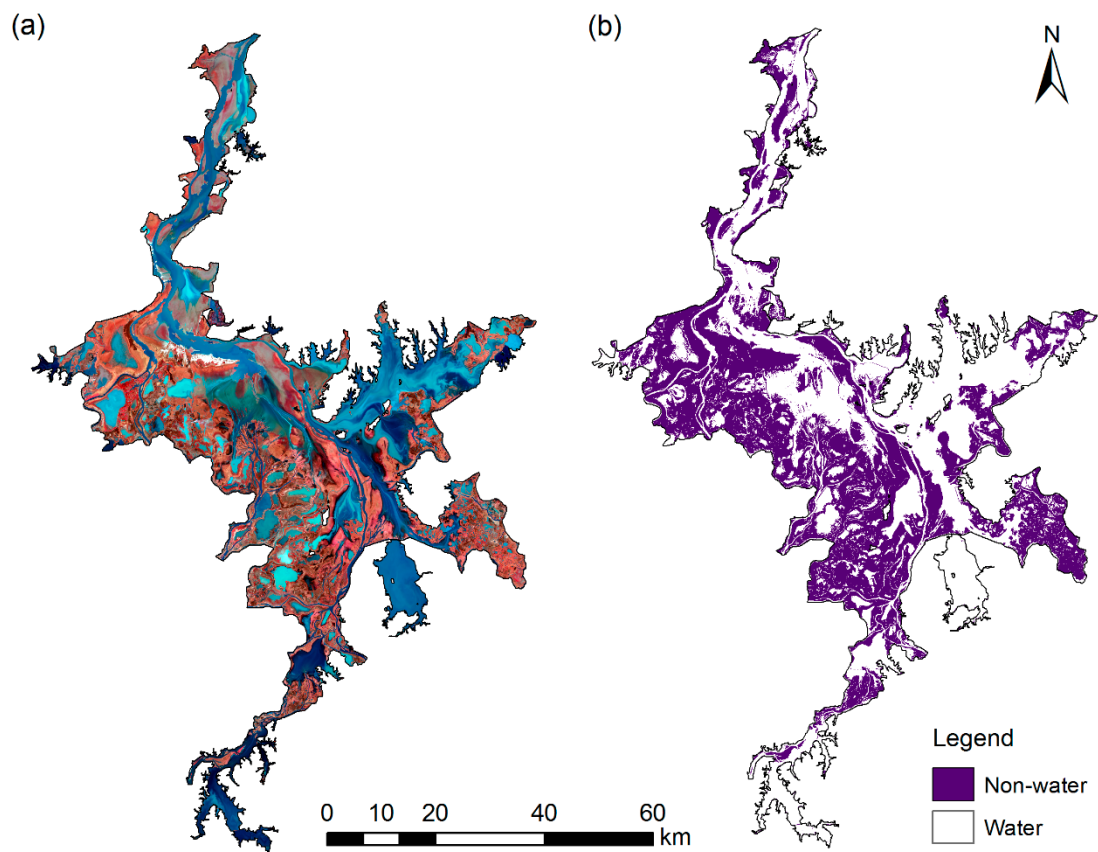


Figure S2. The false color composite (a) and water classification result in this study (b) of Landsat 8 image (Date: 2016.02.16; Path/Row: 121/040)

Table S1. The confusion matrix for water detection algorithm evaluation of this study.

		Ground Reference			User's Accuracy
		Water	Non-Water	Sum	
Classification	Water	961	39	1000	96.10%
	Non-water	28	972	1000	97.20%
Sum		989	1011	2000	Overall accuracy = 96.65%
Producer's accuracy		97.17%	96.14%		Kappa coefficient = 0.933

Table S2. Statistical summary of water body area dynamics of Poyang Lake in different seasons.

Water Body Type	Season	Rate of Change (yr ⁻¹)		
		Area (km ²)	% of mEan	p-Value
Season-maximum	Spring	-14.77 *	-0.53 *	<0.001
	Summer	-5.24 *	-0.15 *	<0.001
	Fall	-21.68 *	-0.75 *	<0.001
	Winter	-7.22 *	-0.38 *	<0.001
Season-long	Spring	-34.49 *	-1.79 *	<0.001
	Summer	-30.00 *	-1.02 *	<0.001
	Fall	-50.55 *	-2.90 *	<0.001
	Winter	-14.14 *	-1.17 *	<0.001
Season-short	Spring	15.11 *	1.81 *	<0.001
	Summer	20.80 *	4.17 *	<0.001
	Fall	21.29 *	1.85 *	<0.001
	Winter	1.22	0.17	0.427

* indicates significant value with 95% confidence interval.

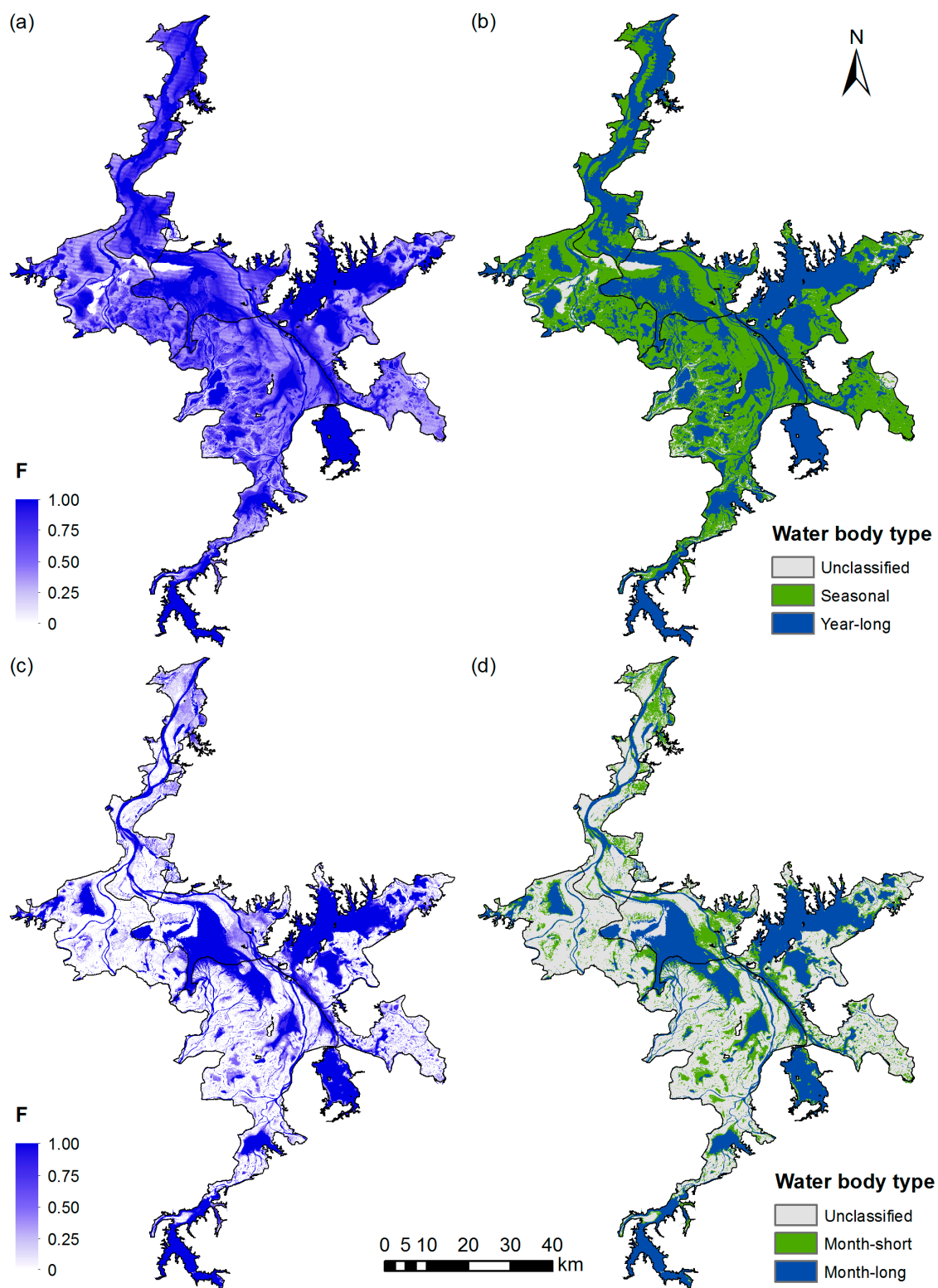


Figure S3. Inundation frequency (in 2016 (a) and January of pre-TGD (b)) and water body classification maps of Poyang Lake ((in 2016 (c) and January of pre-TGD (d))).

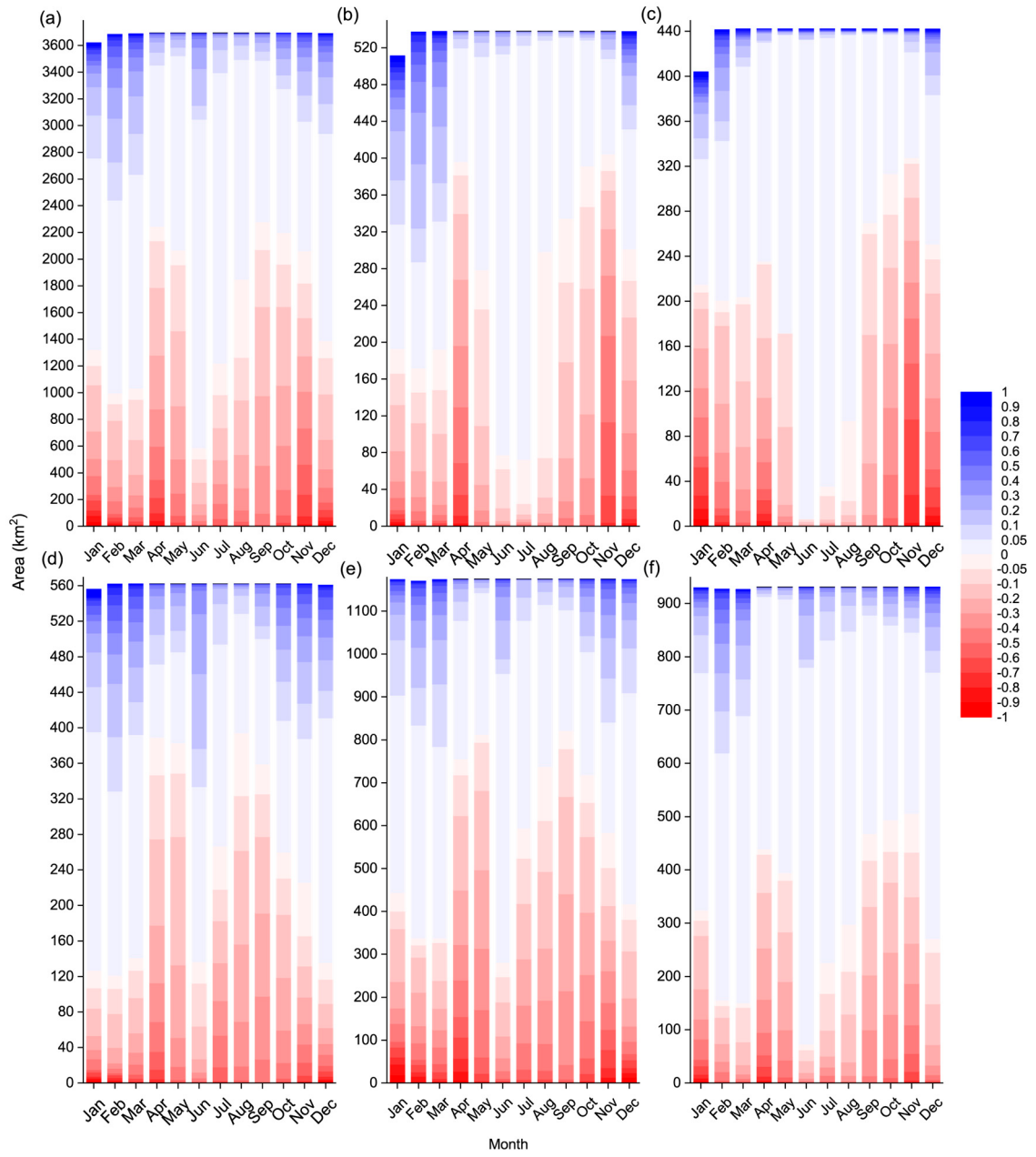


Figure S4. Area distribution of different monthly water frequency change levels in (a) Poyang Lake, (b) Zone 1, (c) Zone 2, (d) Zone 3, (e) Zone 4, and (f) Zone 5.

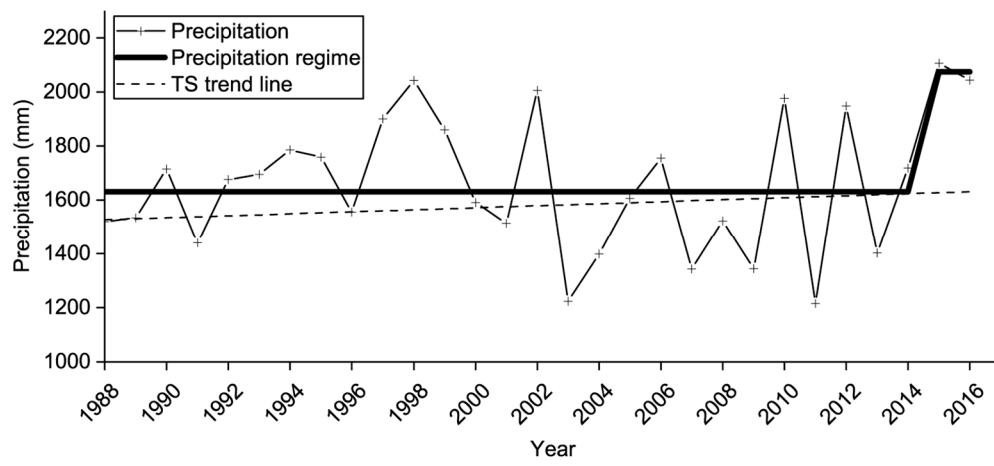


Figure S5. Annual precipitation on the Poyang Lake Basin, with TS trend line and regime shift denoted.