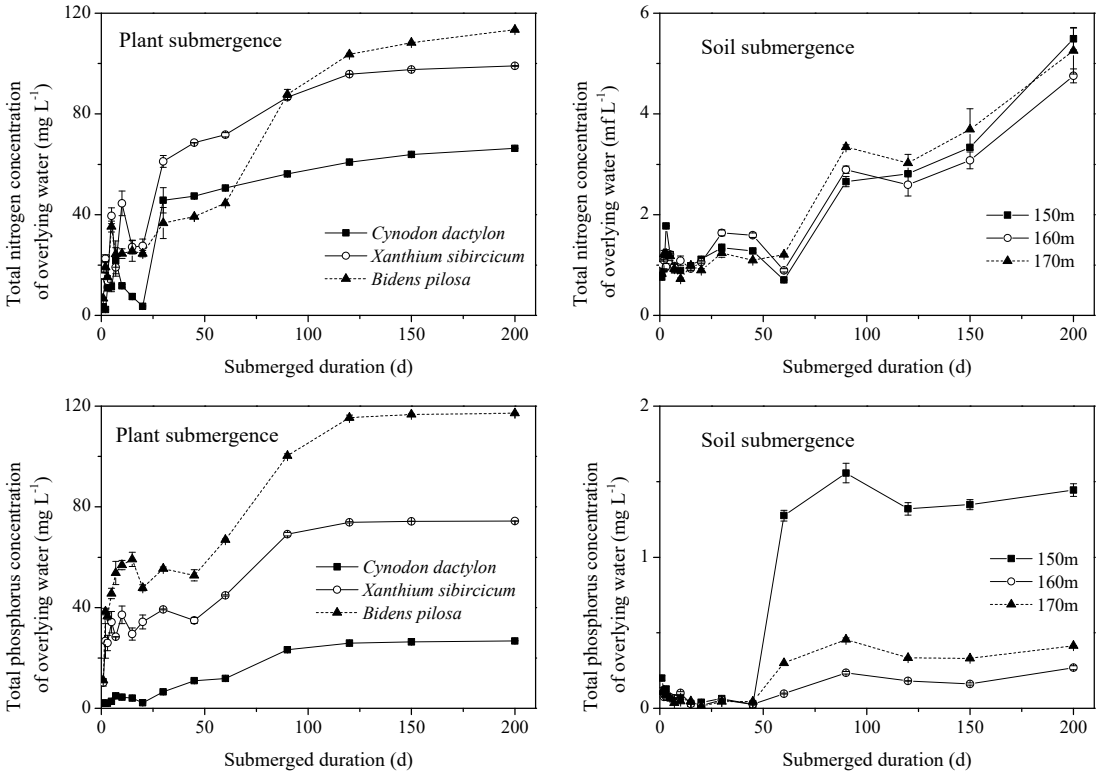


Fig. S1 TN and TP concentration released into the overlying water during soils and plants (isolated from soil-plant systems) submergence



Fig. S2 Periodic water-level change in the Three Gorges Reservoir from April 2023 to April 2024

Table S1 Release rate of TN and TP via soil soaking and soil volume weight

Elevation (m)	Volume weight ($g \cdot cm^{-3}$)	Depth (m)	Release rate of TN ($mg \cdot kg^{-1} \cdot d^{-1}$)	Release rate of TP ($mg \cdot kg^{-1} \cdot d^{-1}$)
150	1.29	0.20	0.55	0.086
160	1.48	0.20	0.48	0.018
170	1.46	0.20	0.53	0.028

* The N and P loadings into overlying water via soil submergence during the flooding period were calculated by equation (3) in the manuscript.

Table S2 Release rate of total nitrogen and phosphorus via different plant soaking and biomass

Plant species	Release rate of TN ($mg \cdot kg^{-1} \cdot d^{-1}$)	Release rate of TP ($mg \cdot kg^{-1} \cdot d^{-1}$)	Biomass at different elevation ($g \cdot m^{-2}$)		
			150m	160m	170m
Cynodon dactylon	23.45	9.46	1287.78	909.65	705.42
Bidens pilosa	38.05	28.57	--	--	302.32
Xanthium sibircicum	44.91	46.37	--	201.55	--

* The N and P loadings into overlying water via plant submergence during the flooding period were calculated by following equation:

$$R = S \times v \times t \times 0.01$$

where R is the N or P loadings via plant submergence per unit area ($kg \cdot ha^{-1}$), S is the above-ground biomass ($g \cdot m^{-2}$), v is the release rate of TN or TP via plant submergence ($mg \cdot kg^{-1} \cdot d^{-1}$), and t is the duration time of submergence for each elevation (d).