List of Supplementary Materials

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Table S1 Random consistency index table

n	1	2	3	4	5	6	7	8	9
R.I.	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45

Table S2 Basis for qualitative index evaluation

Index	**1**	**2**	**3**	**4**	**5**
Habitat type and structure diversity	The habitat is single, the species diversity is poor, and the ecosystem is easily destroyed by external influences.	The habitat is single, easily damaged, and the ecosystem is not stable enough.	Combination of multiple habitats, the stability of the ecosystem is average.	Multi-habitat combination, abundant species, good material circulation, and stable ecosystem.	Combination of multiple habitats, high biodiversity, good material circulation, stable ecosystem, and strong self-repair ability.
Technical advancement	The technology used has not improved in terms of treatment effect, cost, project life, etc. It is an old technology in the field of ecological restoration engineering.	It is an old technology in the field of ecological restoration engineering, but it has better improvements in one aspect.	The technology used is the most common technology at the current stage。	There have been better improvements in water quality treatment effects, economic costs, maintenance costs, ecological restoration, and longevity.	The technology uses the latest theories in the field, and has made better improvements in all aspects, or has made breakthrough improvements in some aspects.
Technical maturity	The technology has not been tested or	The technology has been verified in a	The technology has been applied in many	In actual application, the technology	In the application of technology in engineering, it

	analyzed in detail, and has not been applied to the engineering scale.	simulation environment close to reality, and has a certain degree of adaptability and stability. Most of the functions and technical indicators basically meet the actual requirements.	projects, and the function basically meets the requirements of the project, which can be further improved through improvement.	reached a stable state, and no obvious problems appeared in the test verification.	can fully meet engineering needs and possess stable capabilities.
Engineering operability	The objective conditions such as geography, geology and hydrology do not meet the conditions of project construction, and the construction of the project is very difficult.	In some aspects of geology, economy, and hydrology, it will hinder the construction of the project.	The local geology, geography and other conditions basically require the construction of a complex project, and the project can be constructed.	The local area meets the project construction conditions and can play a role in promoting it in some aspects.	The local geology and geographical conditions are conducive to the construction of the project.
Engineering stability	After the long-term operation of the project, the treatment effect is quite different from the expected, and it fails to meet the design requirements.	After long-term operation, the effect of pollutant reduction gradually declined, the effect of the project did not reach the expected effect, and the management and maintenance did not meet the standards.	The project is relatively stable, the water quality treatment effect has basically reached the expected setting, and management and maintenance are proceeding normally.	The project is stable, and the water quality treatment effect can run for a long time with the expected setting effect.	The project is stable, the water quality treatment effect is better than the expected setting effect and can run stably for a long time, and the management and maintenance are carried out normally.
Maintenance	The	Engineering	Engineering	Engineering	The engineering

complexity	maintenance of the project requires a lot of people, the automatic maintenance is low, and the materials and equipment required for maintenance are many and difficult to obtain.	maintenance requires more than 30 people, and the required materials and equipment are difficult to obtain.	maintenance needs 10-30 people, which can realize the mechanization and automation of maintenance, and the maintenance cycle is long.	maintenance needs 5-10 people, the maintenance cycle is short, the maintenance can be mechanized and automated, the equipment is simple to operate, and the materials are easy to obtain.	maintenance is convenient, it can be realized by only 5 people or less, the maintenance period is short, and the degree of mechanization and automation is high.
Adaptation to the surrounding landscape	The project did not consider the degree of adaptation to the local landscape, the integration of the landscape was poor, and the scenery was abrupt.	Poor integration between the project and the surrounding landscape and the scenery is abrupt.	The integration of engineering and landscape is general and not obtrusive.	The project slightly improves the surrounding landscape.	The project is well integrated with the surrounding landscape, which greatly improves the surrounding viewing degree.
Impact on the surrounding economy	The construction of the project has reduced the surrounding economic level (the number and quality of industries, employment, etc.), which has caused a restraining effect.	The construction of the project has slightly inhibited the surrounding economy.	The project has no impact on the surrounding economy.	The project slightly promoted the surrounding economy, including providing jobs and driving the surrounding market.	The project has promoted the surrounding industries and greatly promoted the improvement of the surrounding economy.

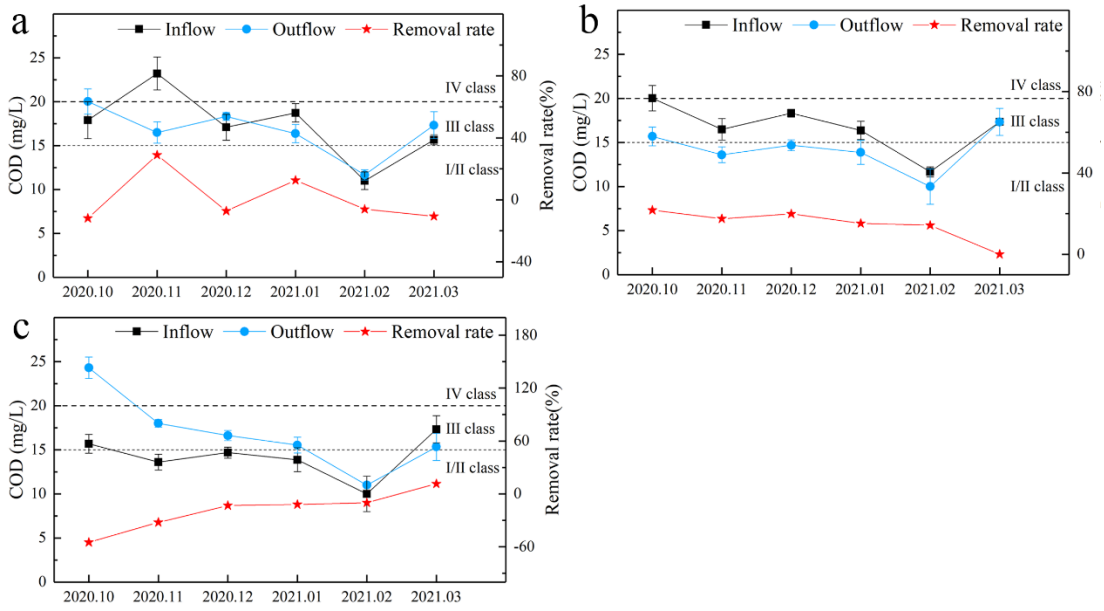

Figure S1 Reduction of COD_{Cr} in Fuhe estuarine wetland (a: pre-ecological sedimentation pond; b: subsurface flow constructed wetland; c: macrophyte pond)

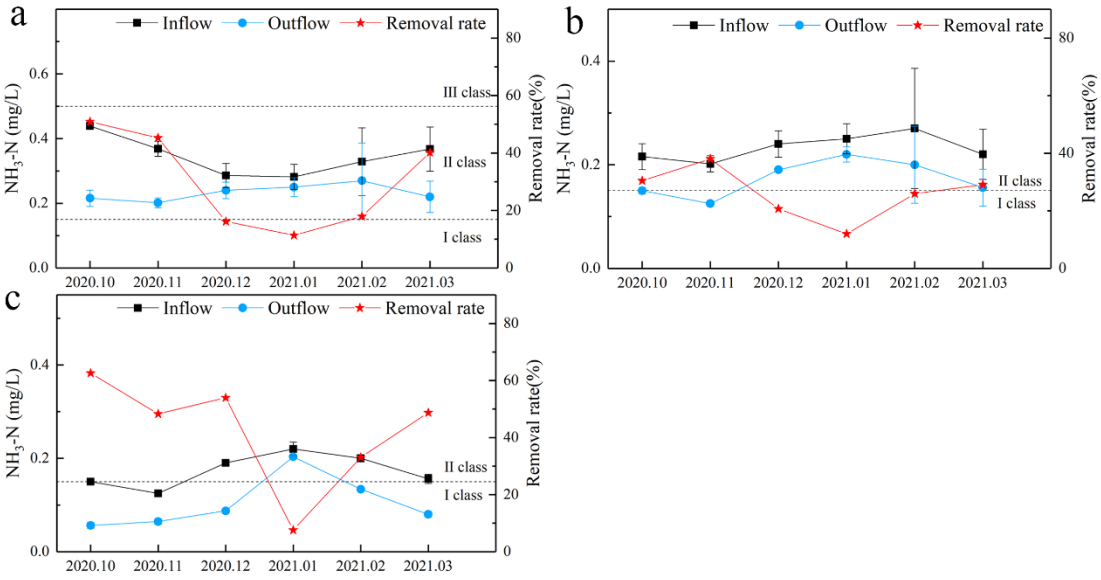

Figure S2 Reduction of NH_3-N in Fuhe estuarine wetland (a: pre-ecological sedimentation pond; b: subsurface flow constructed wetland; c: macrophyte pond)

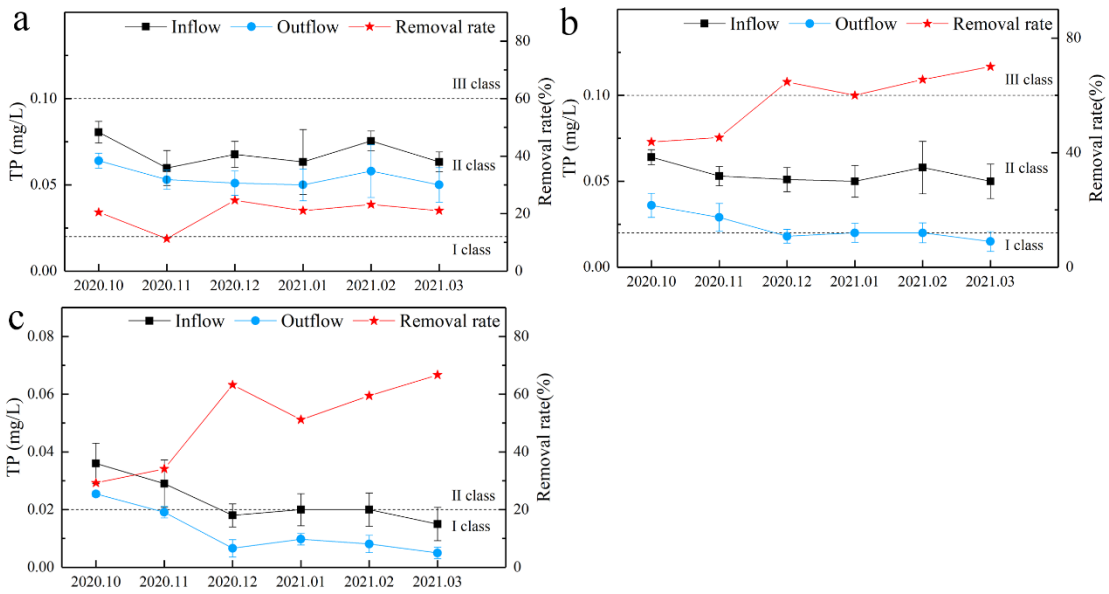

Figure S3 Reduction of TP in Fuhe estuarine wetland (a: pre-ecological sedimentation pond;

b: subsurface flow constructed wetland; c: macrophyte pond)