

1 Mechanisms Underlying the Impacts of *Alternanthera philoxeroides* Invasion on Surface Soil Organic
2 Carbon in the Hongze Lake Wetland: Direct Priming Effects and Phosphorus Limitation influencing
3 Indirect Pathways

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Table O1 Rate of change between non-invaded and invaded groups

Indactors	Inter-group variability
Species	-0.214
Generas	-0.216
Families	-0.292
0-40cm total carbon	-0.344
0-40cm soil organic carbon	-0.349
0-40cm soil available phosphorus	-0.553

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Note: Values are proportional decreases in the invaded group relative to the non-invaded group,

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calculated as $(\text{mean_non-invaded} - \text{mean_invaded})/\text{mean_non-invaded}$. Positive values therefore

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indicate lower values in the invaded group. Plant richness data are based on the herbaceous plant survey

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in 99 quadrats (non-invaded, n = 52; invaded, n = 47).

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Table O2 Percentage contribution of among-group variance

Indactors	Invasion(%)	PCNM(%)
0-40cm soil organic carbon	2.83	23.51
0-20cm NO ₃ ⁻ -N	1.83	54.97
20-40cm NO ₃ ⁻ -N	0.51	63.47

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Note: Variance partitioning was performed using linear mixed models with PCNM spatial

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eigenvectors and hierarchical partitioning (glmm.hp). Values are percentages of total variance explained

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by invasion and PCNM spatial variables.

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20 Table O3 Relative increase in soil organic carbon and total carbon in the 0–20 cm layer compared with
21 the 20–40 cm layer

Indactors	Inter-layer variability
soil organic carbon	+0.236
Soil total carbon	+0.217

22 Note: Values are proportional increases in the 0–20 cm layer relative to the 20–40 cm layer,
23 calculated as $(\text{mean}_{0-20 \text{ cm}} - \text{mean}_{20-40 \text{ cm}}) / \text{mean}_{20-40 \text{ cm}}$.

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