

Table S1. The value of $\delta^{13}\text{C}$ (‰) in different tissues of different plant types. AA, *Acrostichum aureum*; AI, *Acanthus ilicifolius*; AC, *Aegiceras corniculatum*; KO, *Kandelia obovate*; EA, *Excoecaria agallocha*.

Species	Tissue		mean
	root	leaf	
AA	-27.50 ± 0.37	-28.64 ± 0.20	-28.07 ± 0.58
AI	-26.86 ± 0.21	-27.44 ± 0.34	-27.15 ± 0.53
AC	-25.76 ± 0.45	-29.74 ± 0.54	-27.75 ± 0.94
KO	-27.87 ± 0.34	-29.61 ± 0.65	-28.74 ± 0.79
EA	-25.04 ± 0.44	-27.04 ± 0.60	-26.04 ± 0.81

Table S2. Two-way analysis of variance (ANOVA) of soil physical and chemical parameters among the sites and soil layers. BD, soil bulk density; MBC, soil microbial carbon; Fe_t total Fe, Fe_R dithionite-bicarbonate-citrate extractable Fe, Fe_o ammonium oxalate extractable Fe, Fe_p sodium pyrophosphate extractable Fe; SOC: Fe_R molar ratios; $f_{autochthonous}$, the proportion of plant input in soil organic carbon; MAOC, the proportion of heavy fraction in soil; POC, the proportion of light fraction in soil; POC stock, light fraction of SOC stock; MAOC stock, MAOC density fraction of stock; auto-stock, plant input source of SOC stock; allo-stock, allochthonous source of SOC stock.

	Species(df=5)		Layer(df=4)		Species:Layer(df=15)	
	F value	Pr(>F)	F value	Pr(>F)	F value	Pr(>F)
SWC (%)	88.98	<0.001	67.51	<0.001	31.84	<0.001
BD (g/cm ³)	301.89	<0.001	18.24	<0.001	29.03	<0.001
pH	78.06	<0.001	10.68	<0.001	6.02	<0.001
Salinity (‰)	1761.17	<0.001	131.35	<0.001	61.19	<0.001
TN(g/kg-1)	79.67	<0.001	76.93	<0.001	10.37	<0.001
MBC (mg/kg ⁻¹)	166.61	<0.001	13.37	<0.001	32.81	<0.001
SOC (g/kg ⁻¹)	334.93	<0.001	19.46	<0.001	12.46	<0.001
$\delta^{13}C$ value (‰)	123.78	<0.001	5.33	0.002	1.03	0.44
$f_{autochthonous}$ (%)	1900.69	<0.001	14.24	<0.001	16.03	<0.001
POC (g/kg ⁻¹)	360.43	<0.001	15.84	<0.001	11.93	<0.001
MAOC (g/kg ⁻¹)	249.18	<0.001	7.32	<0.001	8.20	<0.001
Fe_t (g/kg ⁻¹)	13.73	<0.001	14.68	<0.001	2.63	0.003
Fe_R (g/kg ⁻¹)	40.9	<0.001	1.28	0.29	3.16	<0.001
Fe_p (g/kg ⁻¹)	5.14	<0.001	2.11	0.11	2.24	0.01
Fe_o (g/kg ⁻¹)	330.96	<0.001	64.53	<0.001	22.51	<0.001
OC: Fe_R ratio	54.26	<0.001	9.85	<0.001	7.20	<0.001
MAOC (%)	24.96	<0.001				
POC (%)	24.96	<0.001				
SOC stock (kg m ⁻²)	145.10	<0.001				
MAOC stock (kg m ⁻²)	162.40	<0.001				
POC stock (kg m ⁻²)	34.30	<0.001				
auto-stock (kg m ⁻²)	983.20	<0.001				
allo-stock (kg m ⁻²)	35.02	<0.001				