

Supplementary materials

Microbial residues as the nexus of inorganic carbon transition to organic carbon in coastal saline soils

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Calculation

Microbial residues are the sum of fungal and bacterial residues. Fungal residue-C was calculated by subtracting bacterial glucosamine (GluN) from total GluN, assuming that muramic acid (MurA) and GluN exist at a 1 to 2 molar ratio in bacterial cells: mg fungal residue-C (g kg^{-1} soil) = (mmol GluN-2×mmol MurA)×179.2×9, where 179.2 is the molecular weight of GluN and 9 is the conversion value of fungal GluN to fungal residue-C. Bacterial residue-C (g kg^{-1} soil) was calculated by multiplying MurA content by 45, where 45 is the conversion value of bacterial MurA to bacterial residue-C (Engelking et al., 2007).

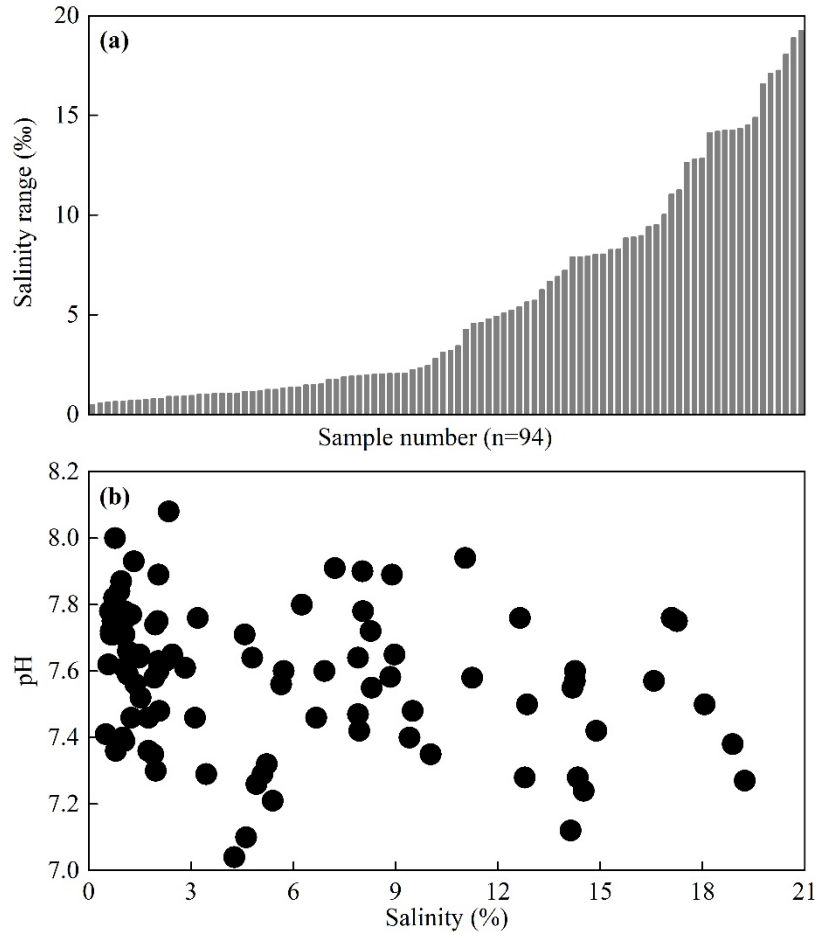


Fig. S1 Changes in salinity levels (a) and pH (b) of coastal saline soils (n=94) in Yellow River Delta.

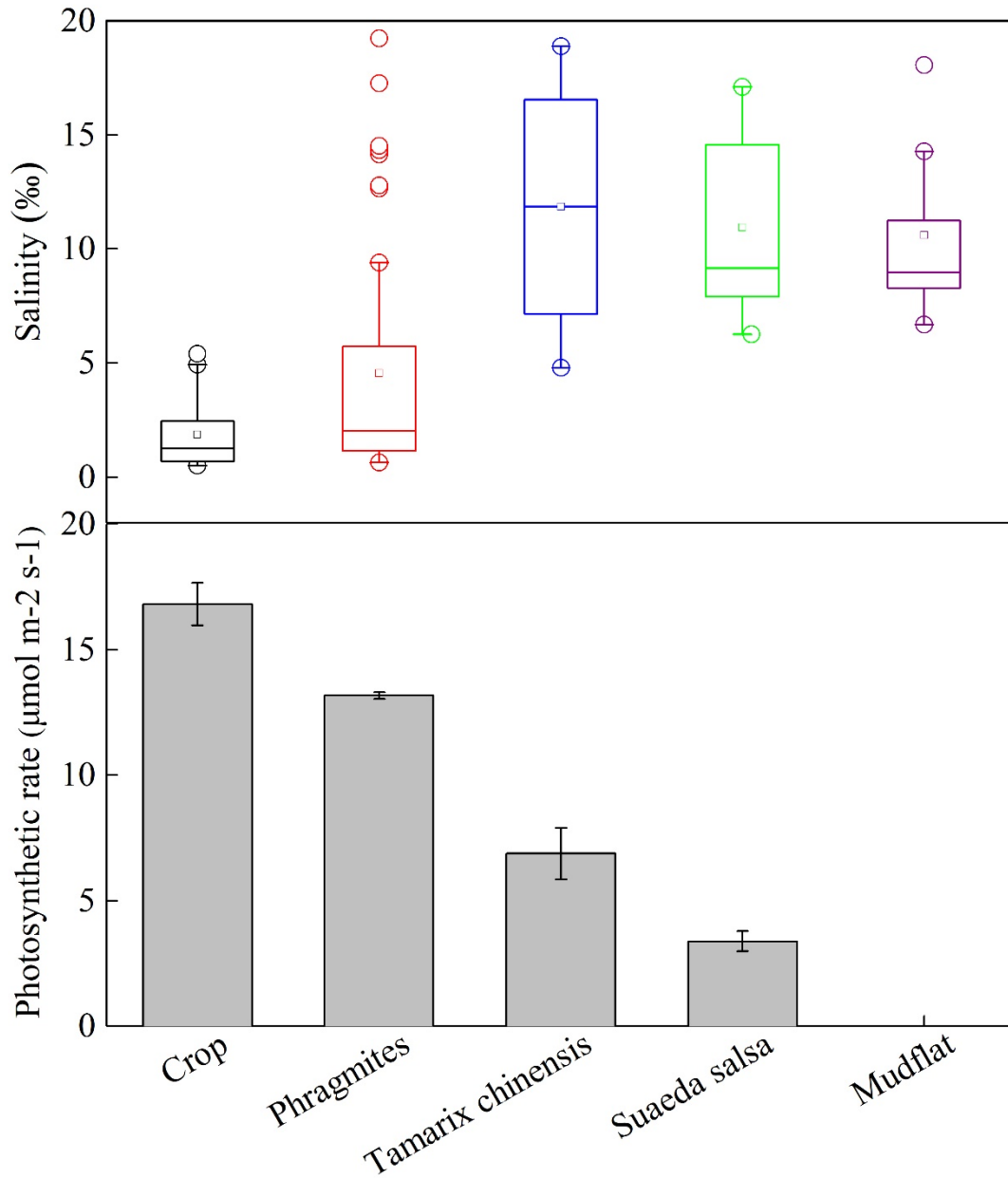


Fig. S2 The distribution and photosynthetic rate of vegetation type along a natural salinity gradient. Plant communities are predominated by crop (mainly maize, n=21) and *Phragmites* (n=47) at low salinity sites; and predominated by *Tamarix chinensis* (n=4), *Suaeda salsa* (n=12), and mudflat (no vegetation, n=10) at high salinity sites. The data on crop photosynthetic rate is originated from Hessini *et al.* (2019).

References

- Engelking, B., Flessa, H., Joergensen, R.G., 2007. Shifts in amino sugar and ergosterol contents after addition of sucrose and cellulose to soil. *Soil Biology and Biochemistry* 39, 2111-2118.
- Hessini, K., Issaoui, K., Ferchichi, S., Saif, T., Abdelly, C., Siddique, K.H., Cruz, C., 2019. Interactive effects of salinity and nitrogen forms on plant growth, photosynthesis and osmotic adjustment in maize. *Plant Physiology and Biochemistry* 139, 171-178.