

Supplementary Information

Title

Success of coastal wetlands restoration is driven by sediment availability

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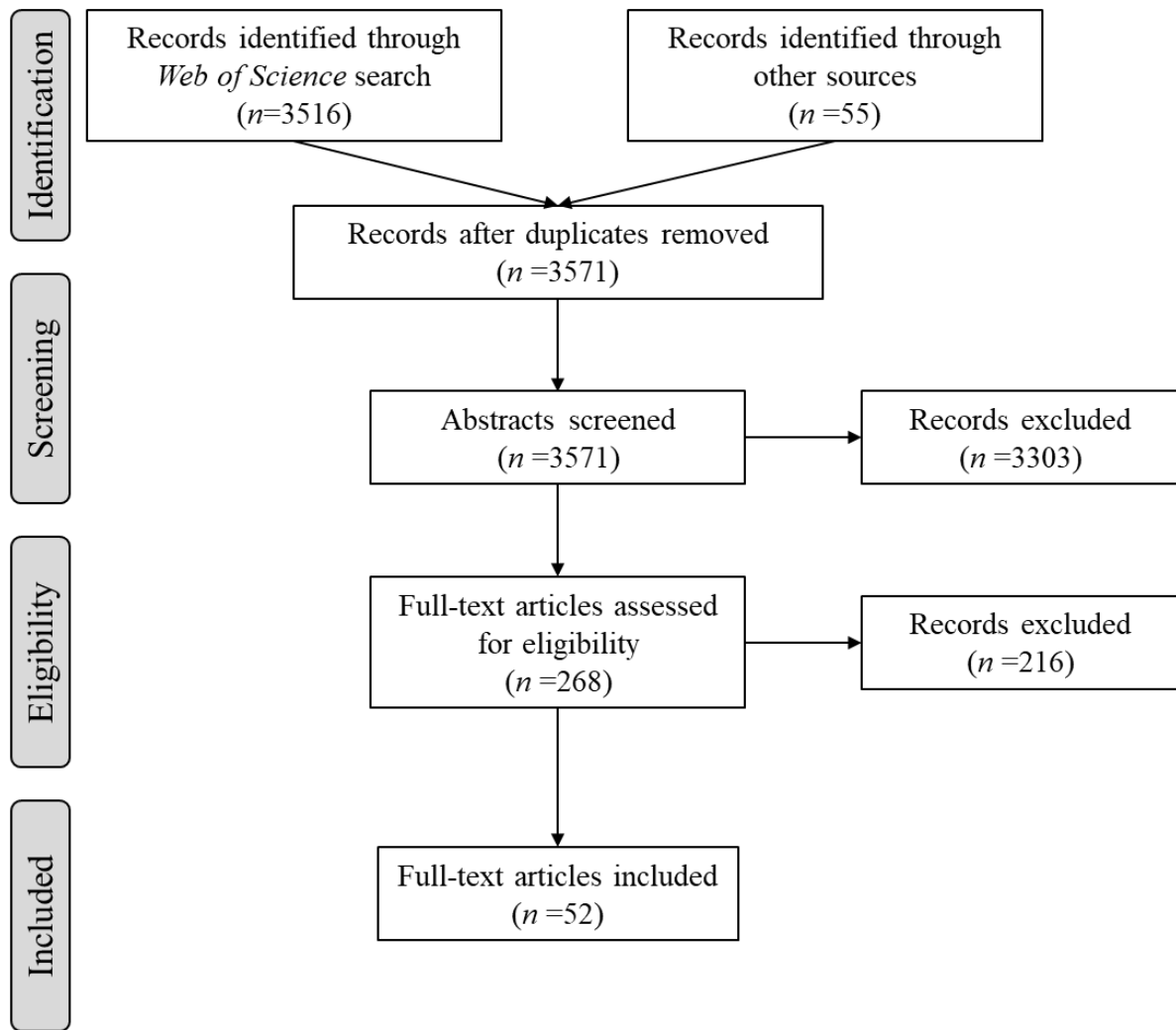
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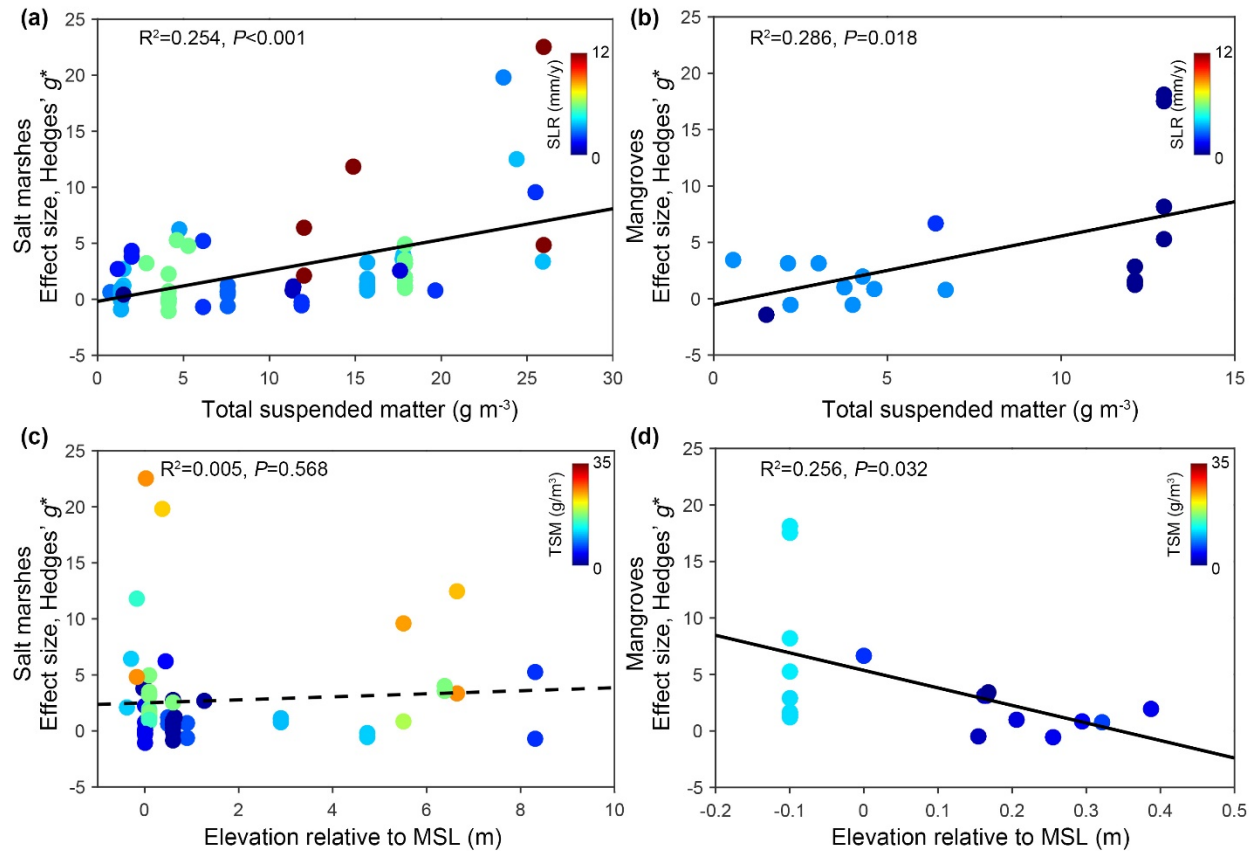
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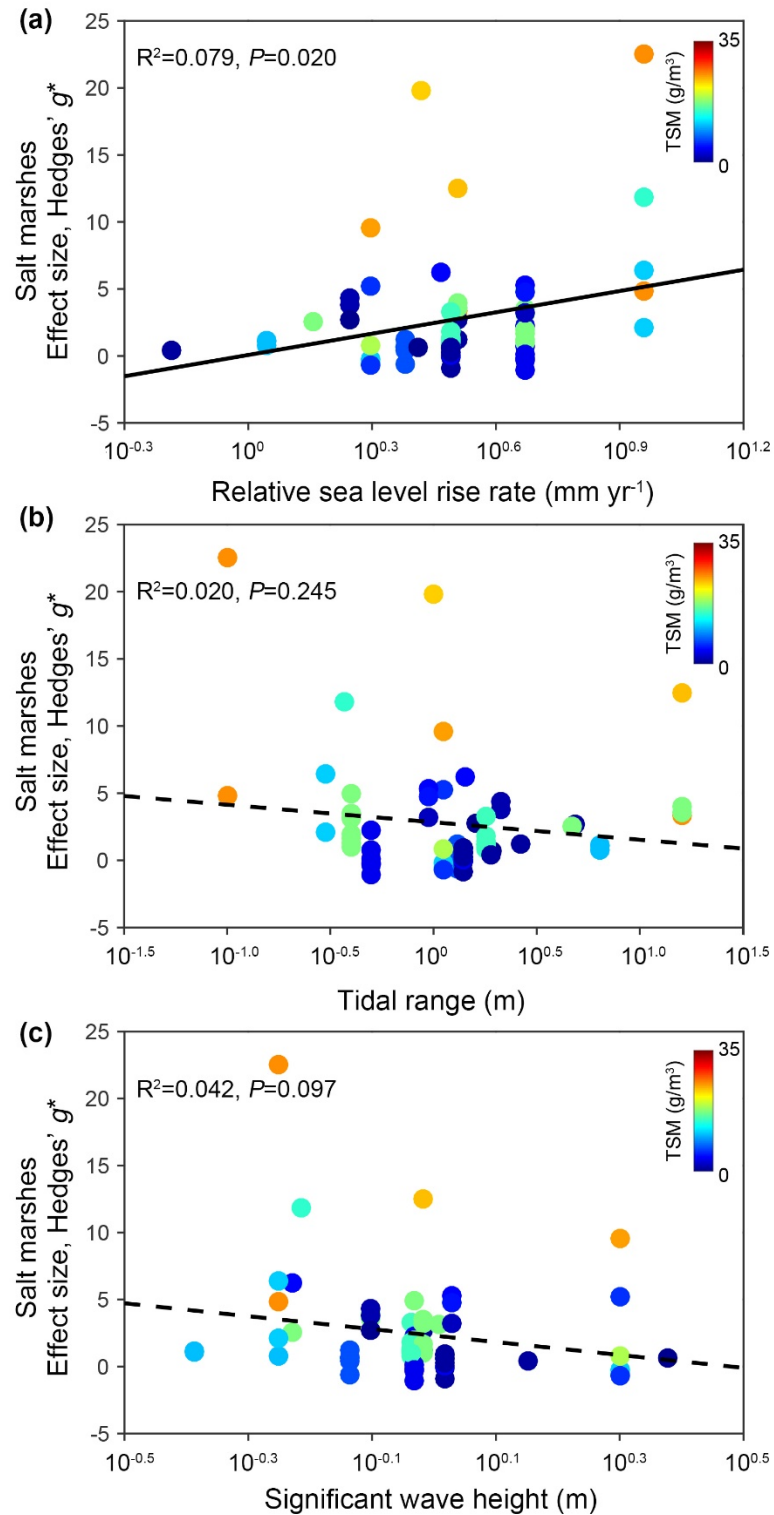
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Supplementary Figure 1. PRISMA flow diagram showing the procedure used to select the publications.

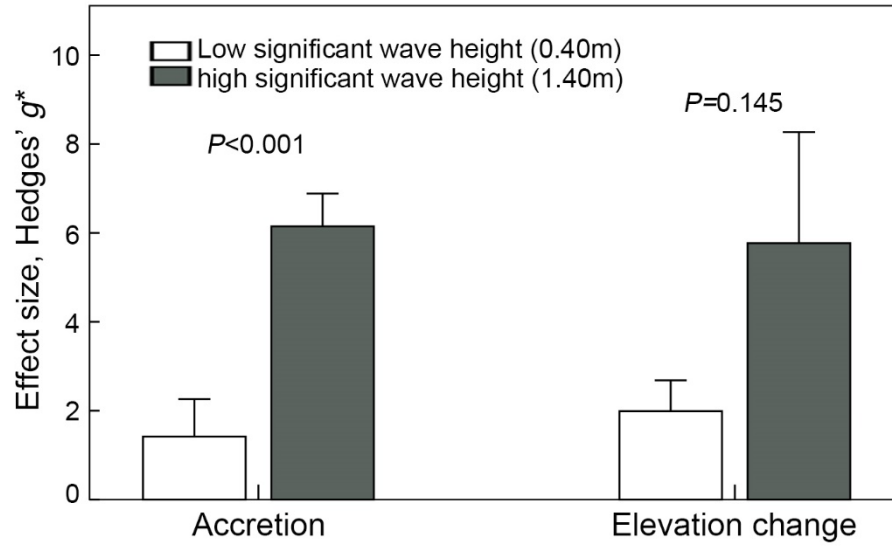


Supplementary Figure 2. Relationship between effect size of elevation change rate and sediment availability or local elevation. **a-b** Relationship between effect size Hedges' g^* of elevation change rate and the total suspended matter concentration in saltmarshes (a) and mangroves (b). **c-d** Relationship between effect size Hedges' g^* of elevation change rate and elevation above mean sea level in saltmarshes (c) and mangroves (d). Regressions of effect size versus TSM and elevation (F test). Significant ($p < 0.05$) and non-significant ($p \geq 0.05$) relationships are shown with solid and dashed lines, respectively. Note: this analysis does not include restoration projects with thin-layer placement of sediment or dredged material, which strongly affect natural accretion.

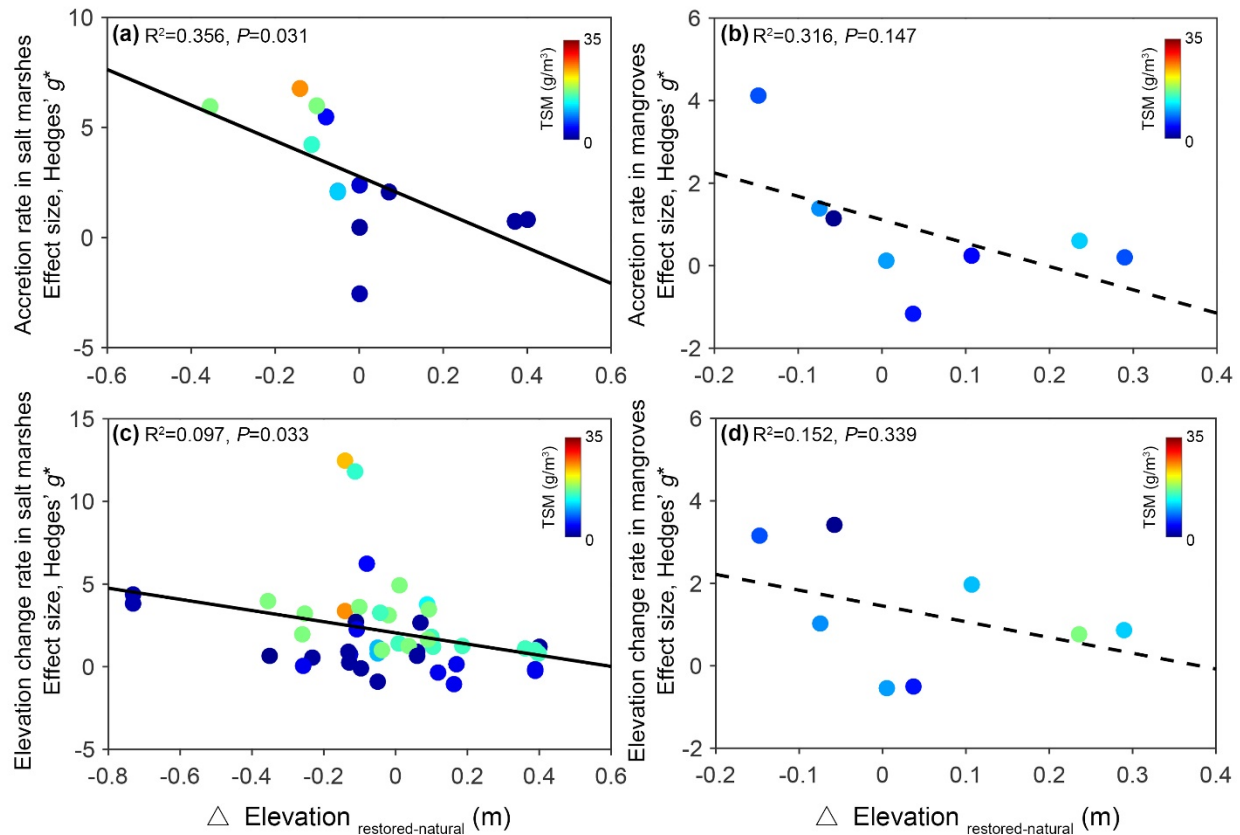


Supplementary Figure 3. Relationship between effect size of elevation change rate and other environmental factors in saltmarshes. a Relationship between Hedges' g^* effect size of elevation

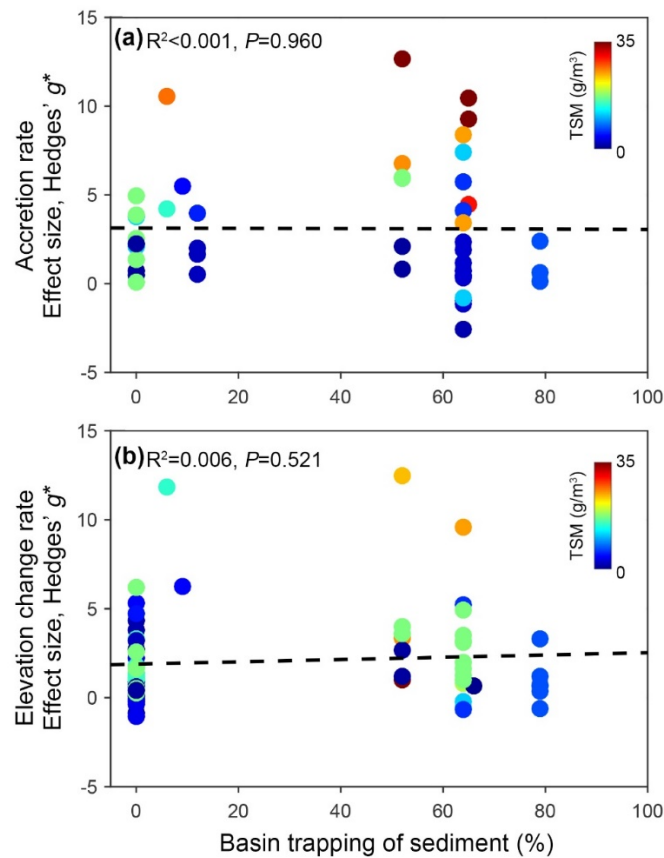
change rate and sea level rise in saltmarshes. **b** Relationship between Hedges' g^* effect size of elevation change rate and tidal range in saltmarshes. **c** Relationship between Hedges' g^* effect size of elevation change rate and significant wave height in saltmarshes. Linear regressions of effect size versus sea level rise rate, tidal range and significant wave height (log-transformed) (F test). Significant ($p < 0.05$) and non-significant ($p \geq 0.05$) relationships are shown with solid and dashed lines, respectively. Note: this analysis does not include the restoration projects with thin-layer placement of sediment or dredged material, which artificially affect deposition rates.



Supplementary Figure 4. Hedges' g^* effect size of rates of accretion and elevation change in mangroves for different wave conditions. The values are expressed as mean $\pm$ SE (t-test).



Supplementary Figure 5. Relationship between effect size and elevation difference between restored and natural reference sites. a-b Relationship between effect size Hedges' g^* of accretion rate and elevation difference between restored and natural reference sites in saltmarshes (a) and mangroves (b). **c-d** Relationship between effect size Hedges' g^* of elevation change rate and elevation difference between restored and natural reference sites in saltmarshes (c) and mangroves (d). Significant ($p < 0.05$) and non-significant ($p \geq 0.05$) regressions (F-test) are shown with solid and dashed lines, respectively. Note: this analysis does not include restoration projects with thin-layer placement of sediment or dredged material.



Supplementary Figure 6. Relationship between effect size and percent of sediment trapped in the reservoirs of the nearest large river. a Relationship between effect size Hedges' g^* of accretion rate in saltmarshes and percent of sediment trapped in the reservoirs. **b** Relationship between effect size Hedges' g^* of elevation change rate in salt marshes and percent of sediment trapped in the reservoirs. The percent of sediment trapped was derived from the Conservation Biology Institute (data freely available from <https://databasin.org/maps/new#datasets=188f4523bd944e79a02d59d0a5b4bd8>). Significant ($p < 0.05$) and non-significant ($p \geq 0.05$) regressions (F test) are shown with solid and dashed lines, respectively. Note: this analysis does not include restoration projects with thin-layer placement of sediment or dredged material.

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