



Supplement of

Sediment and carbon deposition vary among vegetation assemblages in a coastal salt marsh

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SUPPLEMENTARY INFORMATION

Table S1. Elevation data (mean \pm standard error) for each of five replicate plots in each vegetation assemblage. The number of tides exceeding each mean plot elevation at a nearby tidal gauge are provided as an indicator of likely inundation patterns for the four deployment periods

| Vegetation | Plot | Elevation | December | December | January | January |
|-------------|------|---|---|----------|-------------|---------|
| assemblage | # | $(\text{mean} \pm \text{SE})$ | neap | spring | neap | spring |
| | | cm above LAT | Number of tides exceeding mean plot eleva | | t elevation | |
| Sarcocornia | 1 | $151.20 \hspace{0.1 in} \pm \hspace{0.1 in} 0.58$ | 3 | 7 | 1 | 6 |
| | 2 | $155.20 \hspace{0.2cm} \pm \hspace{0.2cm} 0.57$ | 1 | 7 | 0 | 6 |
| | 3 | 151.40 ± 1.22 | 3 | 7 | 1 | 6 |
| | 4 | $148.30 \hspace{0.1 in} \pm \hspace{0.1 in} 0.59$ | 3 | 8 | 2 | 10 |
| | 5 | $178.37 \hspace{0.1in} \pm \hspace{0.1in} 0.33$ | 0 | 6 | 0 | 5 |
| Sporobolus | 1 | $155.17 \hspace{0.2cm} \pm \hspace{0.2cm} 0.91$ | 1 | 7 | 0 | 6 |
| | 2 | $156.63 \hspace{0.1in} \pm \hspace{0.1in} 0.35$ | 1 | 7 | 0 | 6 |
| | 3 | $156.90 \hspace{0.1 in} \pm \hspace{0.1 in} 0.50$ | 1 | 7 | 0 | 6 |
| | 4 | 158.27 ± 1.29 | 1 | 6 | 0 | 6 |
| | 5 | $162.80 \hspace{0.2cm} \pm \hspace{0.2cm} 0.44$ | 1 | 6 | 0 | 6 |
| Juncus | 1 | $181.33 \hspace{0.1in} \pm \hspace{0.1in} 0.45$ | 0 | 6 | 0 | 5 |
| | 2 | $185.70 \hspace{0.2cm} \pm \hspace{0.2cm} 0.17$ | 0 | 6 | 0 | 5 |
| | 3 | $187.10 \hspace{0.1 in} \pm \hspace{0.1 in} 0.29$ | 0 | 6 | 0 | 5 |
| | 4 | $179.70 \hspace{0.2cm} \pm \hspace{0.2cm} 0.45$ | 0 | 6 | 0 | 5 |
| | 5 | $183.37 \hspace{0.2cm} \pm \hspace{0.2cm} 0.44$ | 0 | 6 | 0 | 5 |

Table S2. Regression statistics for medium-term surface accumulation rates based up marker horizon measurements. This data compares regression models where the y-intercept was not forced (method used in this study) and regression models where the y-intercept was forced to 0.

| | Approach used: Not forcing y- intercept = 0 | | Forcing y-intercept = 0 | | |
|--------------------------|--|-----------------------------------|---|-----------------------------------|--|
| Vegetation assemblage | Linear accretion rate (mm) ± SE | R ² ; P-value | Linear accretion rate (mm y ⁻¹) ± SE | R ² ; P-value | |
| Sarcocornia | 0.78 ± 0.18 | R ² = 0.16; P<0.001 | 0.92 ± 0.09 | R ² = 0.59; P<0.001 | |
| Sporobolus | 0.88 ± 0.22 | R ² = 0.14; P<0.001 | 1.30 ± 0.11 | R ² = 0.65; P<0.001 | |
| Juncus | 1.74 ± 0.13 | R ² = 0.68; P<0.001 | 1.70 ± 0.06 | R ² = 0.91; P<0.001 | |

| Community | Tide | %C | %N | C:N |
|-------------|-----------------|-------|------|-------|
| Sarcocornia | December neap | 4.18 | 0.31 | 13.59 |
| | December spring | 3.37 | 0.25 | 13.69 |
| | January neap | 3.07 | 0.21 | 14.72 |
| | January spring | 3.56 | 0.24 | 14.65 |
| Sporobolus | December neap | 4.50 | 0.31 | 14.72 |
| | December spring | 6.56 | 0.37 | 17.81 |
| | January neap | 3.88 | 0.24 | 16.26 |
| | January spring | 4.04 | 0.27 | 14.80 |
| Juncus | December neap | 16.66 | 0.85 | 19.57 |
| | December spring | 14.36 | 0.81 | 17.62 |
| | January neap | 16.81 | 0.85 | 19.70 |
| | January spring | 9.05 | 0.48 | 18.72 |
| | | | | |

Table S3. Elemental composition and C:N ratio for organic component of unidentified residues collected on filter papers.



Fig S1. Plots of bulk material (all mineral, litter and unidentifiable organic components) retained within vials against the surface elevation of the study plot each vial was located within. Regression lines and statistics are included where there was a significant (P<0.05) linear fit. Note the log scale on the Y axes. DW = dry weight; AHD = Australian Height Datum.



Fig S2. Plots of bulk material (all mineral, litter and unidentifiable organic components) retained on filters against the surface elevation of the study plot each filter was located within. There were no significant (P<0.05) linear fits. Note the log scale on the Y axes.



Fig S3. Daily rainfall (mm) records before, during and after filter and vial installation periods. Installation periods are shaded in grey. DN = December neap; DS = December spring; JN = January neap; JS = January spring.