

SUPPLEMENTAL FIGURE 1

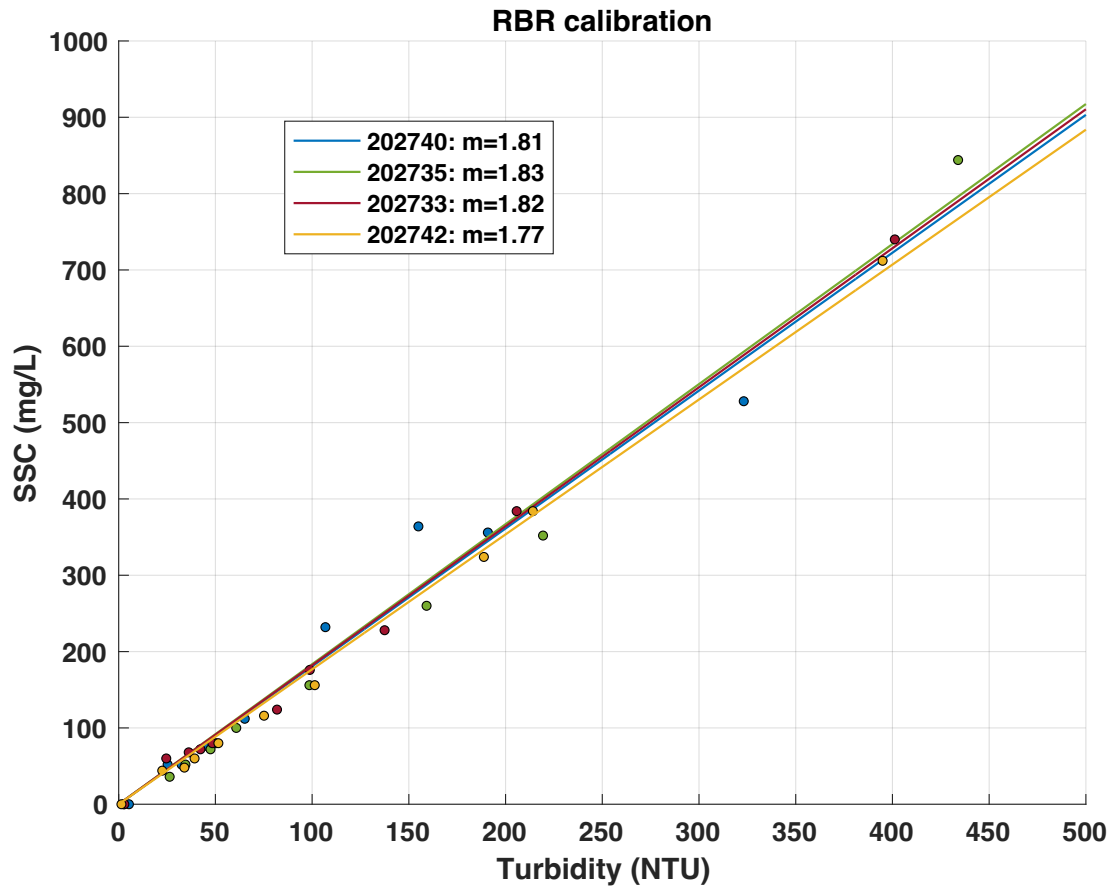


Fig. S1 Turbidity to SSC calibrations for RBR sensors deployed in study. All sensors provide a similar calibration of $NTU \times 1.8 = SSC$.

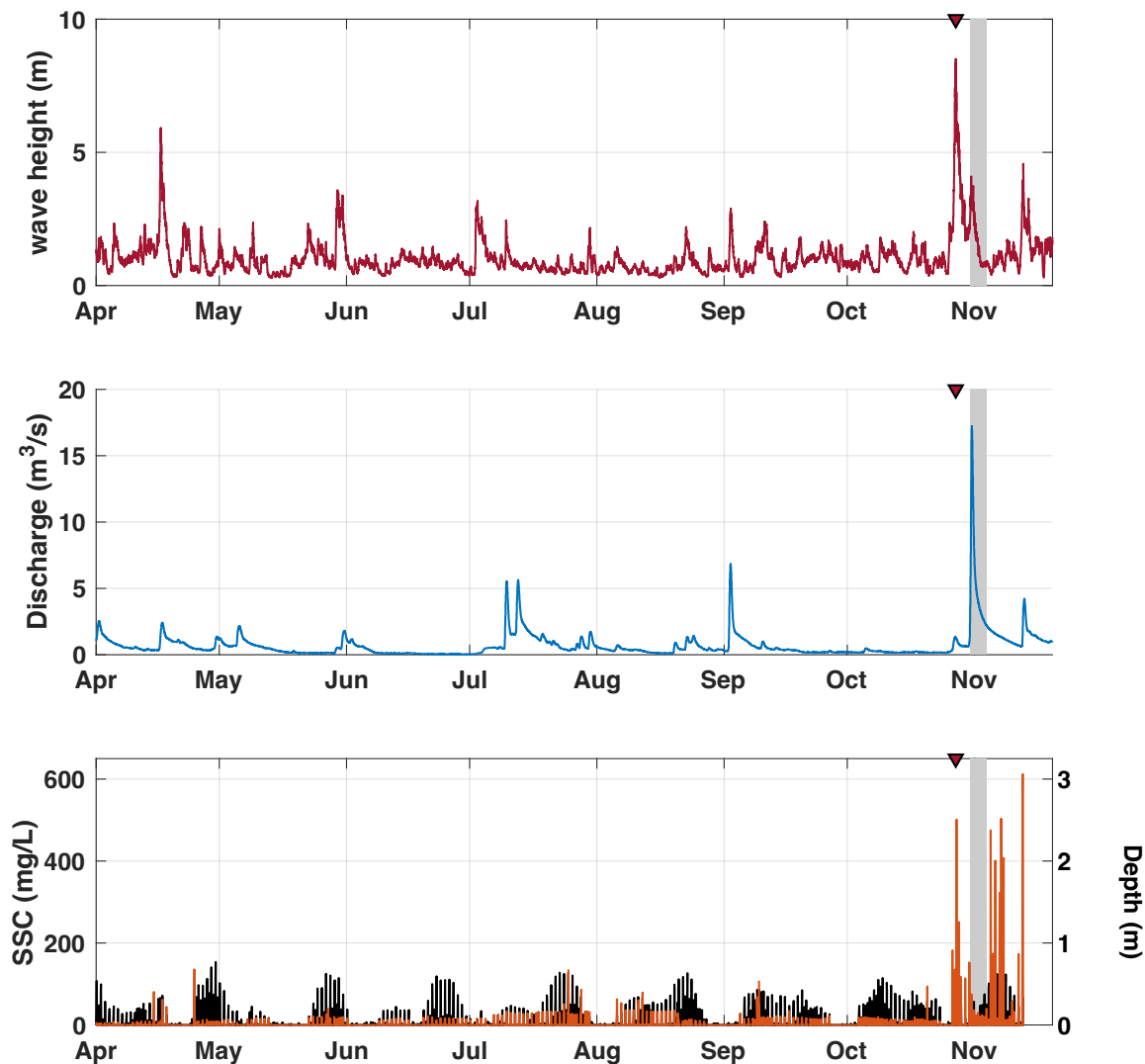
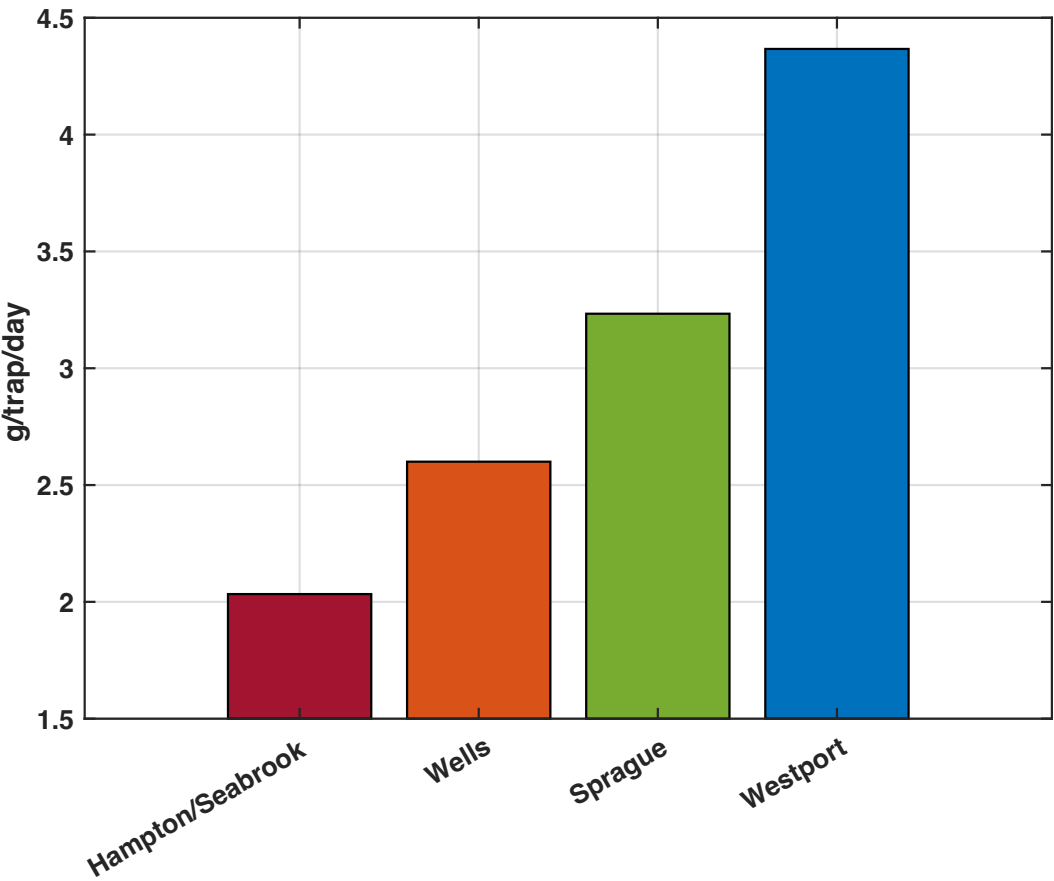


Fig. S2 Time series for 2021 from the Hampton/Seabrook marsh. (Top) Significant wave heights from the nearest NOAA buoy at Jeffrey's Ledge (Buoy # 44098); (Middle) River discharge from the nearest USGS stream gage on the Winnicutt River (#01073785); and (Bottom) Suspended sediment concentration (SSC, orange) and water depth (black) from the Hampton/Seabrook marsh edge platform (42.923699 N, 70.836470 W, 1.177 m NAVD88). Timing for peak wave height for the year is indicated with a triangle. Gray shading indicates period of greatest freshwater discharge. Temporal trends in SSC are similar to that observed just to the north in Wells, ME (Figure 4 main text) with the onset for persistently high SSC occurring during a late October wave event and preceding peak river discharge.

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SUPPLEMENTAL FIGURE 3



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Fig. S3 Relative crab abundances measured at representative sites over the same ~2 week period centered on the mid-August timing for peak crab activity at Westport (dashed black line in bottom panel of Figure 5 in main text).

SUPPLEMENTAL FIGURE 4

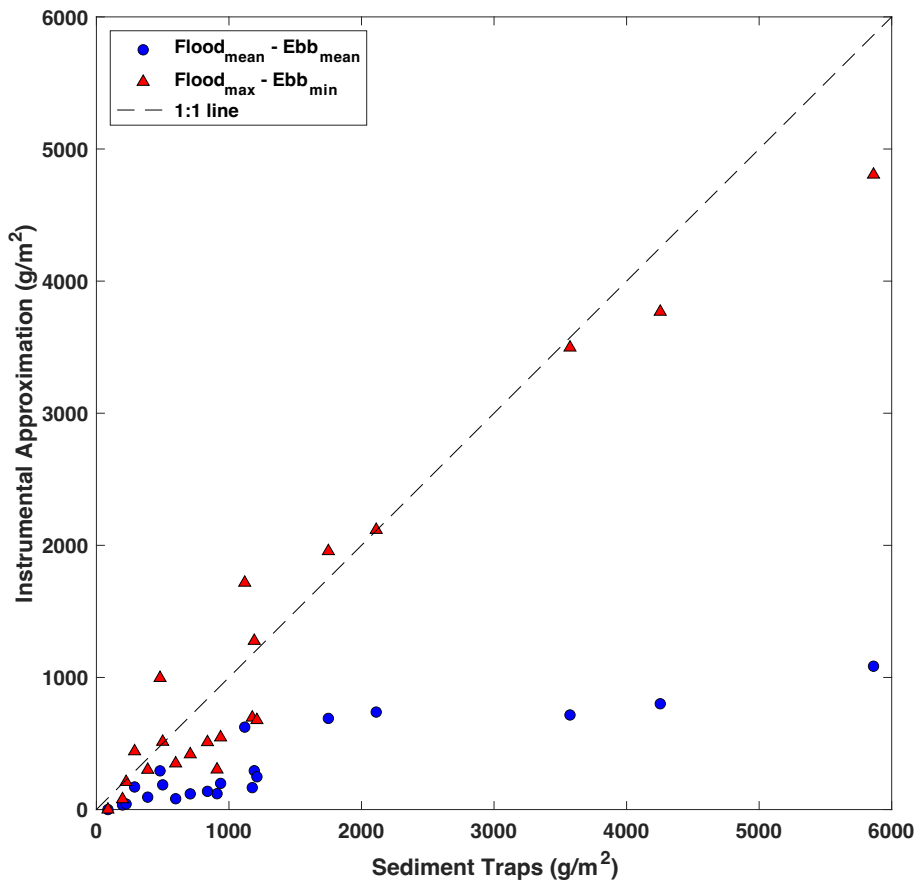


Fig. S4 Direct observations of seasonal marsh platform deposition from sediment traps compared to independent instrumentally estimated cumulative sediment trapping. (Blue) Instrumental approximation obtained where the water depth for each inundating tide is multiplied by the difference between mean flood SSC and mean ebb SSC and then cumulated over the sediment trap deployment period. (Red) Instrumental approximation obtained where water depth for each inundating tide is multiplied by the difference between peak flood SSC and the minimum ebb SSC and then cumulated over the sediment trap deployment period. (Dashed line) One-to-one line supporting a stronger correspondence between sediment trap observations and the max flood SSC and min ebb SSC differencing method.

SUPPLEMENTAL FIGURE 5

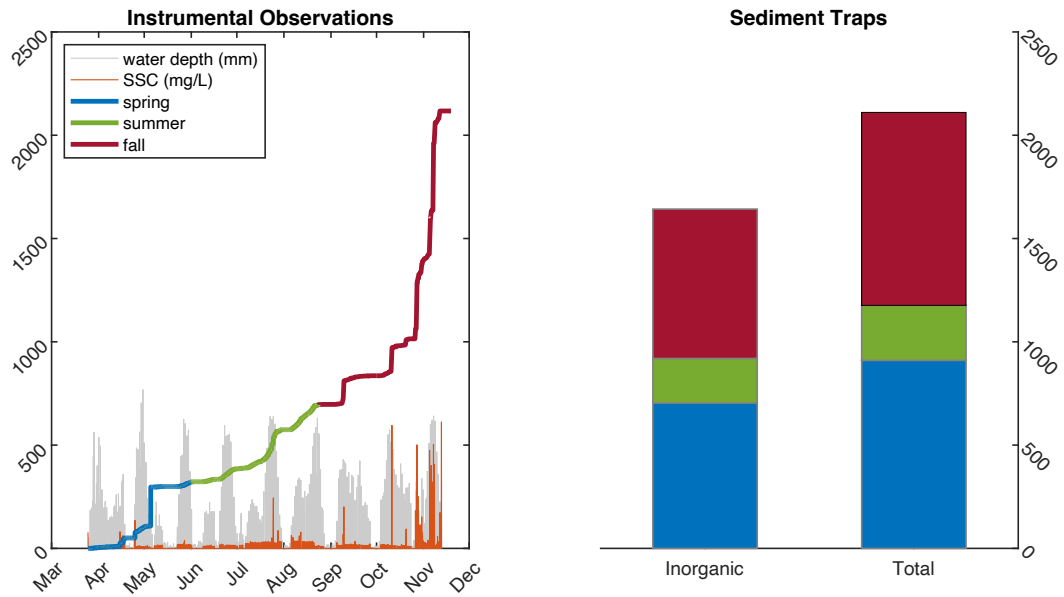


Fig. S5 (Left Panels) Estimates of cumulative sedimentation for spring (blue), summer (green) and fall (red) of 2021 based on instrumental observations of SSC (orange) and water depth (gray) for Hampton/Seabrook. Seasonal sedimentation, SSC and depth are in units of g/m^2 , mg/L and mm , respectively. (Right Panel) Inorganic and total deposition in sediment traps over same seasons and at same location as left panel and with same spring/summer/fall color scheme.

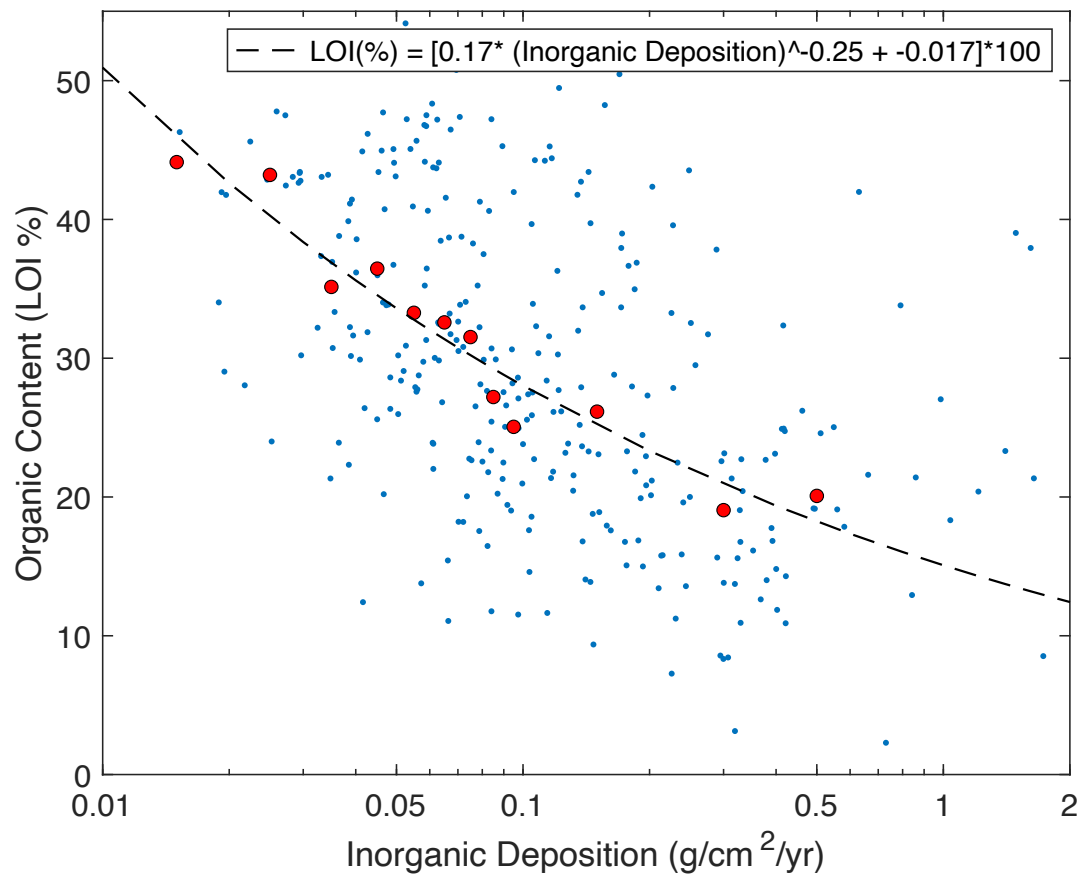


Fig. S6 Organic content (LOI%) from sediment traps plotted against inorganic deposition rates (blue dots) with an associated power law fit (dashed line). Binned median values (red circles) are provided for reference.