

Interactive comment on “The importance of an estuarine salinity gradient on soil organic carbon stocks of tidal marshes” by Marijn Van de Broek et al.

M. Schwartz (Referee)

mschwartz@uwf.edu

Received and published: 4 October 2016

The authors have presented a comprehensive assessment of both depositional and preservation factors influencing the accumulation of soil/sedimentary organic carbon across an estuarine salinity gradient. Their analysis of contributions from changes in surface vegetation type (e.g., C3 vs. C4 plants) and geochemical influence of OC decomposition rates at different salinity regimes provides a useful framework for assessing how forecast sea level rise could affect organic carbon storage in estuaries experiencing saltwater intrusion. Their examination of spatial variability in both OC supply and decomposition rates is robust and spans the estuarine salinity gradient.

Notable absent is data for (or an estimate of) sediment accretion rates at each of the
C1

three estuarine zones sampled.

How will sea level rise and saltwater intrusion affect the location of the estuarine turbidity maximum and resulting allochthonous OC deposition?

Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-285, 2016.