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Salt tectonics affect organic matter quality and quantity of a coastal wetland in southwest Louisiana

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Natural and anthropogenic processes drive subsidence and land loss in coastal Louisiana. However, the effects of subsidence from salt diapirism faulting on organic matter (OM) quality and quantity are yet to be evaluated. Here, we measured bulk density at 2-cm depth intervals within six, ~1-m long cores collected on each side of a faulted coastal marsh of intermediate salinity (i.e., 0.5 to 5 PSU). Soil cores were collected at paired locations across three different patches of emergent vegetation dominated by distinct plant species: *Spartina patens, Phragmites australis, and Schoenoplectus californicus*. Lower bulk densities (characteristic of organic soils) persisted in each core on the upthrown side of the fault to a depth of ≤ 34cm across all vegetation types. However, lower bulk densities were observed from cores collected in *Phragmites australis* and *Spartina patens* vegetation compared to those collected in *Schoenoplectus californicus* vegetation, suggesting a biotic control on OM quantity and quality. Next steps in our study include soil dating with ^{210}Pb in upthrown and downthrown locations to infer relative erosion (or deposition) after faulting occurred. Also, carbon and nitrogen isotopes analyses will be performed along the upthrown and downthrown core profiles to assess direct changes in organic matter quality.