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Towards a Sedimentary Carbon Stock Estimate for Scotland's EEZ: A Tiered Mapping Approach.

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Coastal and shelf sediments trap and bury significant quantities carbon (Berner, 1982) and provide an conditions allowing for the long-term storage of carbon. Through burying this carbon these sediments potentially provide a climate mitigation services. Currently our understanding of the spatial distribution of C within the surficial sediments of coastal and shelf seas is limited. Using Scotland's EEZ as a natural laboratory in conjunction with the tiered seabed mapping methodology developed by Smeaton and Austin (2019), we show that coastal and shelf sediments are highly heterogenous in both sediment type and C content. The tiered approach utilised in this study is ideally suited to global applications where data availability may differ significantly. Improved spatial mapping of seabed C will provide policy makers with a new tool for the targeted management and protection of these globally important C stores.

Berner, R. A., 1982, Burial of organic carbon and pyrite sulfur in the modern ocean: Its geochemical and environmental significance. *Am. J. Sci.* 282, 451–473 (1982)

Smeaton, C. and Austin, W.E.N., 2019. Where's the Carbon: Exploring the Spatial Heterogeneity of Sedimentary Carbon in Mid-Latitude Fjords. *Frontiers in Earth Science*, 7, p.269.

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