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Trapping Blue Carbon– the potential Super Power of Managed Realignments

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Abstract

There is increasing recognition of importance and potential of coastal habitats in locking away Blue Carbon and thus helping to mitigate climate change. Saltmarshes are known to be highly effective carbon sinks and can sequester carbon at higher rates than terrestrial ecosystems. This presentation will review the evidence for carbon trapping in marshes restored through managed realignment schemes. These restored marshes are evidently 'super trappers' of carbon and sediment, with the amount of carbon they initially trap tending to be much higher than in nearby mature habitats. This is due to such sites playing catch up with surrounding intertidal habitats, having been cut off from tidal inundation for decades or centuries. Sites have been shown to sequester many times as much carbon as mature habitats in the first few years post implementation, with those located in estuaries with high sediment loads (e.g. the Humber) potentially locking away much more. We have analysed accretion rates at 12 existing UK managed realignment schemes and estimated the amount of carbon trapped in their sediment to describe their value. The costs of intertidal habitat creation schemes can be very high, particularly in areas of the country where competition for land is high. Carbon markets could provide a considerable source of funding for future restoration work. There are, though, still gaps in our understanding about some carbon processes (including the role of autochthonous and allochthonous sources), and we are not yet able to calculate all the bio-geochemical processes with sufficient accuracy to meet 'verified carbon standards'. There is much work being done therefore to better understand the value of restored marshes and help build the evidence for applying carbon crediting systems, whilst also developing pragmatic ways to embed Blue Carbon valuations into real-world decision making. This study provides a contribution to this work.

Keywords

blue carbon, carbon sequestration, managed realignment, accretion