

Oregon Salt Marshes: How Blue are They?

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Two important ecosystem services of wetlands are carbon sequestration and filtration of nutrients and particulates. We quantified the carbon and nitrogen accumulation rates in salt marshes at 135 plots distributed across eight estuaries located in Oregon, USA. Net carbon and nitrogen accumulation rates were quantified by measuring the carbon and nitrogen content of sediment that accumulated in marsh habitat over a 2 to 3 year period using the feldspar marker horizon method. For a subset (n=17) of the sites, short-term sedimentation rates were compared to long-term rates (determined using Cs¹³⁷). Short-term accretion rates were related to plot elevation, with low marsh habitats accreting at faster rates than high marsh habitats. On average, the accretion rates appear to be balancing the rate of local sea level rise. High marsh habitat had higher carbon and nitrogen content and lower bulk densities than low marsh habitat. Low marsh habitat appeared to accumulate carbon and nitrogen at a higher rate than high marsh habitat. Data from this study will be used to generate a blue carbon estimate for Oregon estuaries, which will be compared to values estimated in other areas.