Wave attenuation by salt marsh vegetation

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Abstract

Salt marshes are a characteristic feature of estuaries and coastal seas. They are found in the upper coastal intertidal zones between land and water, which are regularly flooded by tides and surges. They are covered with salt-tolerant vegetation types, such as herbs and grasses. Sheltering from continuous intense hydrodynamic forcing by waves and currents and sufficient supply of (fine) sediment are the two main requirements for salt marsh development. The presence of vegetation accelerates the sediment settlement by reducing the wave forces on the bed material. Additionally, the roots of the plants stabilize the accumulated sediments and amplify the process of subsoil drainage, consolidation and compaction. Salt marshes and the intertidal flats in front form a coherent system with many mutual dependencies.

Keywords: salt marsh, vegetation, wave attenuation, estuaries

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