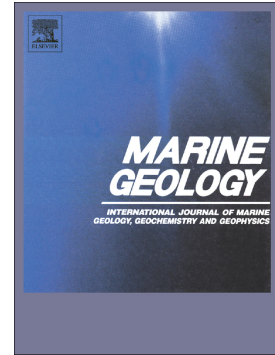


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Coastal flooding and the 1861-2 California storm season

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Keywords

Estuaries (morphology and stratigraphy); Estuarine processes; NE Pacific; geochronology; storms and their deposits; atmospheric rivers

Abstract

A series of large storms attributed to Atmospheric River conditions struck the California coast in the winter of 1861-2. Although historical accounts document inland flooding, little is known about how the 1861-2 storms impacted the now heavily-developed California coast. Here we show that the 1861-2 storms emplaced a deposit of beach sand up to 50 cm thick over 450 m inland within a southern California salt marsh. This deposit is unprecedented in the post-European sediments of the marsh and more extensive than that derived from any other historical event. It is comparable in scale to hurricane and tsunami washover fans in back-barrier environments along other coastlines. The presence of overwash deposits in Carpinteria suggests

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