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Intermittent Estuaries: Linking Hydro-geomorphic Context to Climate Change Resilience

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ABSTRACT

Intermittent estuaries are temporarily open to exchange with the open ocean, and the influence of their entrance opening regime on hydrological and ecological function has received considerable attention. Here we consider the influence of tectonic, climatic and geomorphic controls on the distribution of estuarine habitats by contrasting two settings: the south coasts of New South Wales, Australia, and California USA. The combination of tectonic uplift and semi-arid, variable hydrology in southern California provides a stronger sediment yield to estuaries than in the tectonically stable temperate setting of southern Australia. This reflects in a greater proportional area of intertidal vegetation and a higher elevation capital than encountered in SE Australia. The implications for estuary management in the context of sea-level rise and urbanization are discussed.

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