

A Million Years of Coastal Dunes and Linkages to Sea-level Change on the Sunshine Coast, Australia



The Sunshine Coast of southeast Queensland, Australia is home to an extensive system of coastal dune fields and barrier islands that contain an archive of sea level and climate change. Fraser Island, the world's largest sand island, and the adjacent Cooloola Dune Field form the northern part of these extensive sand barriers. Samples for Optically Stimulated Luminescence (OSL) dating were collected from cores and coastal bluffs to investigate the age of these parabolic dune sequences. Ground Penetrating Radar (GPR) and stratigraphic descriptions of buried mega-podzols provide additional framework to reconstruct the histories of the dune fields. Results indicate 1 Myr of dune emplacement and suggest linkages to rising sea levels, with increased dune activity following the mid-Pleistocene transition and a switch to 100-kyr eccentricity-driven global glaciation and sea-level variability.



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