



Beach-dune environments and coastal management: an interconnected system.

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Sandy coastlines comprising beaches and coastal dunes are one of the most heavily used environments on Earth. Recent reports suggest that $\frac{3}{4}$ of the world's population could be living within 60 km of the coastline by 2020, with human activities such as tourism, residential uses, and resource extraction strongly affecting coastal environments. Beach-dune systems are, however, one of the most dynamic landscapes on our planet. Waves, winds, tides, and currents drive sediment transport and interact with complex, changing topographies in three dimensions. This makes coasts some of the most difficult environments to model.

This talk will explore our current understanding of **beach-dune system changes at a range of spatial and temporal scales**. We will discuss how our research contributes to understanding of coastal behaviour and thus to improving predictions of coastal change. The talk will **critically analyse current coastal management paradigms** and their links to coastal sciences. Despite their relevance to society and to coastal protection schemes, it is common to find gaps between research-led projects and coastal planning decisions, with short-term and long-term socio-economic impacts. The talk will end with references to recent **science communication efforts** and transdisciplinary coastal projects (e.g., [Coasts for Kids](#) | @Coasts4Kids)