

Battles for our Beaches



June 6th 2014 marked the 70th anniversary of the D-Day landings on the beaches of Normandy, Northern France. The landings required months of careful preparation.

Offshore sand bars were an area of particular concern due to their tendency to migrate onshore and reduce water depths, causing difficulties for boats and landing craft. Huge advances were made in

understanding coastal processes during the

war, based on systematic monitoring from aircraft, submarines, amphibious vessels and land-based instrumentation.

Seventy years on the battle for our beaches is continuing. The threat of rising sea levels and increased storminess, as experienced last winter, are of great concern to coastal managers and society as a whole. Beaches provide not only space for recreation, but also natural protection for our coastlines. Offshore sand bars provide natural protection to coastlines, dissipating wave energy and providing sediment for beach nourishment.

Here at Lancaster we are conducting research into sand bar migration and their role in storing and releasing sediment to the beach. Our research is taking place along the Fylde coast just north of Blackpool, where some of the first systematic beach measurements of sand bar migration were made in preparation for the D-Day landings. We are using state-of-the-art surveying techniques (GPS and video-based technologies) in conjunction with high resolution LiDAR data, provided by the Environment Agency, in order to gain a better understanding of the processes influencing onshore and long-shore bar migration. The information that we are generating is being used by the local authority to inform future coastal management strategies.

Lancaster University is less than 10km from the coast and our students gain first-hand experience of the coastal environment throughout their degree. In the first year, for example, they explore different management options (hard and soft) along the Fylde coast. In the third year they collect their own data in order to derive a set of coastal indicators that can be used to describe changes in beach conditions and inform management decisions.

For more details about the reports above or about Geography courses on offer at Lancaster University please contact the Geography Admissions Staff,

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Looking north from Blackpool with offshore sand bars clearly visible.



GPS survey of beach characteristics on a typically sunny day!



Summarising different coastal management strategies through sand art.

Top Left: Omaha Beach 6th June 1944. Photograph courtesy of: Chief Petty Officer **Robert F. Sargent** (United States Coast Guard).

