

The use of a low cost, time-lapse camera for high frequency monitoring of intertidal beach morphology

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1 STATE OF THE ART & METHODS

Coastal monitoring of sandy beaches requires data gathering at regular time scales to capture daily to weekly geomorphological changes.

From traditional GPS profiling to **more sophisticated techniques** (UAVS, TLS, TLC) that allow faster and more convenient surveys.



High-frequency imagery generated from a low-cost, fixed, **time-lapse camera (TLC)** system as an effective method.

TLC deployed over-looking a beach-dune complex at **Five Finger strand, NW Ireland**, set to acquire images every 30 min.

Images **calibrated** using multiple GCPs/GPS and **georeferenced** in ArcGIS.

Average distance of each pixel on the ground was converted into real-world distance using a **scaling factor**.

2 RESULTS

The **leading edge of an onshore migrating intertidal bar** was successfully tracked using a set of chronological captured images over a **shoreward distance of 59 m** in a month period.

13th February 2017



13th March 2017



It provides a **rich dataset for examining long-term intertidal beach dynamics** and to compare forcing and **response phenomena in between storms**.

It will enhance future **monitoring of highly dynamic coastal systems** enabling a more detailed spatial and temporal analysis.