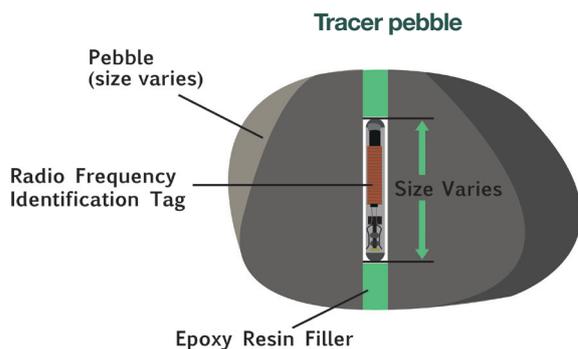


## Hurst Spit Tracer Study 2019 - 2020

A Tracer Pebble study was undertaken by Coastal Partners on behalf of the New Forest District Council (NFDC). The study has helped to further understand sediment transport pathways along 4.5 km of Hurst Spit between Milford-on-Sea and North Point. The results will inform the next phase of the Hurst Spit Beach Management Plan currently being progressed.

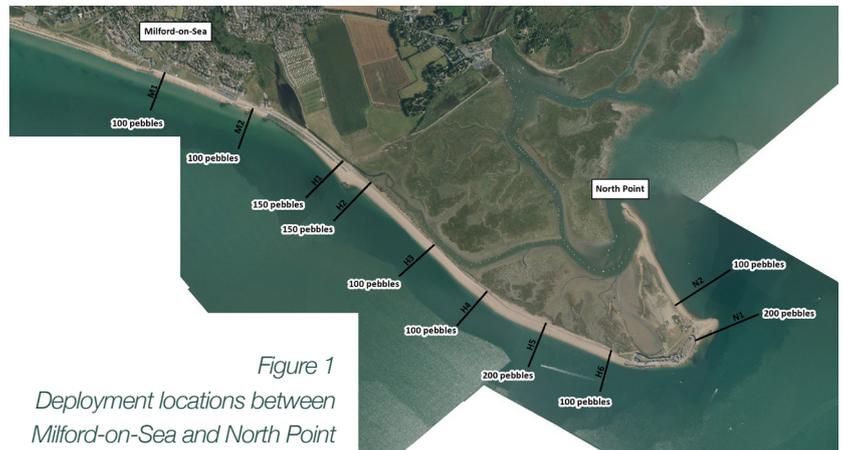
In July 2019, we deployed 1,300 tracer pebbles across 10 different sites along the frontage (Figure 1). The tracer pebbles used, were native to the site with a unique Radio Frequency Identification (RFID) tag sealed inside.



**The RFID tag broadcasts a unique ID number assigned to the pebble, which is detected using specialised Global Positioning System (GPS) equipment to track the pebble's precise location at a point in time. This is a novel technique developed in house at Coastal Partners.**



Ten retrieval surveys were carried out over the following 16 month period to track the location of the pebbles using GPS. Results from this study, in combination with data collected as part of the Regional Monitoring Programme were used to provide estimates of sediment drift rates and directions along the frontage. Importantly, these results supported findings presented as part of the SCOPAC Sediment Transport Study which can be viewed at: [www.scopac.org.uk/sts/](http://www.scopac.org.uk/sts/)



The study was also successful in showing that material is able to bypass beach control structures at Milford-on-Sea (wooden groynes and rock groynes) and the rock revetment fronting Sturt Pond which has not been evident from other monitoring techniques (Figure 2). It was found that sediment transport rates here were around 20% lower than along the main trunk of the spit. The offshore breakwater structure was also shown to be successful in slowing transport rates which helps to stabilise the beach around the structure.

*Tracer Pebble Developer, Sacha*



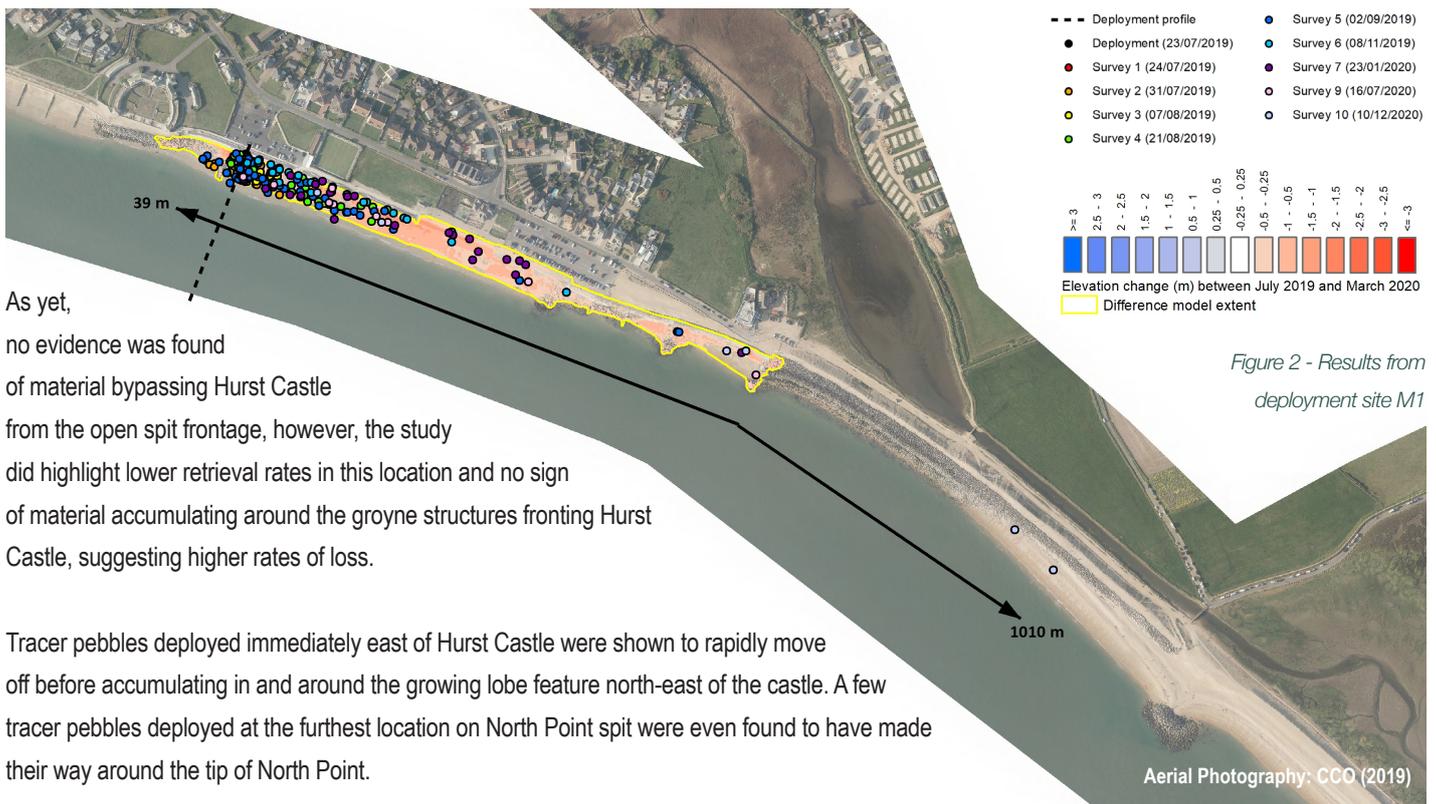
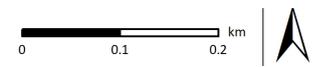


Figure 2 - Results from deployment site M1

As yet, no evidence was found of material bypassing Hurst Castle from the open spit frontage, however, the study did highlight lower retrieval rates in this location and no sign of material accumulating around the groyne structures fronting Hurst Castle, suggesting higher rates of loss.

Tracer pebbles deployed immediately east of Hurst Castle were shown to rapidly move off before accumulating in and around the growing lobe feature north-east of the castle. A few tracer pebbles deployed at the furthest location on North Point spit were even found to have made their way around the tip of North Point.

The study was a great success and has provided some valuable information that can be used to inform future coastal management decisions such as the Hurst Spit Beach Management Plan and the Lymington to Hurst Spit options development currently being progressed by New Forest District Council and Environment Agency.



Over the course of the study, there were a number of challenges to overcome, the biggest being the global pandemic and COVID-19 restrictions. This resulted in delays to some of the surveys from March 2020 and future survey plans were adjusted to ensure all staff could work socially distanced and COVID compliant.

As a result, the original one-year long study was extended by 4 and a half months to ensure all scheduled retrieval surveys were undertaken and the best possible results obtained.

*"I am really pleased with what you and your team have produced. It is an extremely interesting and detailed report, which will be tremendously valuable to us as Hurst is progressed. It is nice to flick through the images and see the changes from one survey to the next. I cannot believe how much the pebbles appear to bounce around the groyne bays before shooting off towards Hurst. I was also impressed (and surprised) with the distance some pebbles appear to have travelled, very useful information."*

Peter Ferguson (Coastal Project Engineer, NFDC)

There is growing interest in this method of Tracer Pebble survey, with future deployments along the south coast of England being co-ordinated by the SCG and SCOPAC. If you are interested in using this method on your beaches, please contact Coastal Partners at [coastal.team@havant.gov.uk](mailto:coastal.team@havant.gov.uk)



Sunny day at Hurst Spit