

BBC Countryfile Feature



The innovative design and technical capabilities of Coastal Partners' Tracer Pebbles came to the attention of the BBC's flagship show Countryfile in 2018.

Coastal research engineers Sacha Neill and Dr. Samantha Cope were interviewed at Hayling Island by BBC Countryfile's presenter Ellie Harrison where they demonstrated how the tracer pebbles help to build an understanding of longshore drift patterns along the Hayling beach frontage.



Why are Tracer Pebbles needed?

We have a very good understanding of beach behaviour based on years of data collection through other survey methods such as topographic walk over surveys, analysis of aerial photography, airborne LiDAR and more recently Laser Scans of the beach surface. From these surveys we are able to assess where and how much material has been lost or gained from the upper beach.

However, this only provides us with data from a snapshot in time. These analysis methods do not tell us where the material has moved from, where it is going or how quickly it is moving.

By incorporating the results from the tracer surveys, we can monitor material movement a lot more closely. The type of answers we can get from the tracer studies include:

- Distance travelled by the centroid in the time since release (mean velocity of longshore movement is determined)
- Thickness of the moving sediment layer
- Width of the beach over which transport is occurring

By understanding this behaviour and the short-term variability within that, we can work a lot more efficiently to manage the beach, ultimately working to protect vulnerable homes from flooding and keep our amenity beach in place.

How are Tracer studies used in managing the coast?

The tracer studies have been extremely useful along the South Hayling frontage to confirm sediment transport pathways, which inform our beach management activities. Tracer studies, combined with survey data from the South-east Regional Monitoring Programme help us to understand where to extract drifted material from and where to take it back to.

There is a transient drift divide at Eastoke where two thirds of the material moves towards the western end of Hayling Island and a third moves east. The location of the drift divide fluctuates so the Tracers help us to deposit material in the correct location and continue to work with coastal processes.

In essence, we're trying to replicate the natural system and the tracers help us to do this.



Key Facts

- In two years one of our pebbles travelled 3.5 km along Hayling beach
- We have seen movement of around 1 km in a month
- A pebble deployed in 2010 was detected in 2018
- During storm Brian we lost 15 m of beach crest which we need to be able to replace, ideally recycling material from other areas of the beach. This is what the tracers help to show where the material has travelled to.

BBC Countryfile film crew

