

PHYSICAL FIELDWORK INVESTIGATION

HYPOTHESIS:

Hard engineering controls longshore drift in Hornsea

Data Collection Methods:

DROP EITHER SIDE OF THE GROYNE – *Primary, Quantitative, biased sampling*

To find out which direction longshore drift was travelling in and whether the groynes were effectively trapping sediment on one side to reduce the impact of longshore drift. We chose a points along the groynes where there was the biggest difference in the height of the sand. This was a biased sample.

BEACH LENGTH EITHER SIDE OF THE GROYNE – *Primary, Quantitative, Stratified sampling*

We measured the length of the beach from the start of the groyne to the swash zone to see whether the groynes were effective in building up the beach.

Location:

Close proximity to school so the data could be collected in one day.

Hornsea has 15 groynes so we were able to test our hypothesis at a number of locations along the stretch of coast which made the results more reliable as we had a large sample size.

Risk Assessment:

RISK: Falling non/near the groynes

MITIGATION: Students given the school emergency mobile number, stayed in groups of a minimum of 3, wear sensible footwear.

RISK: Drowning

MITIGATION: Stay above the swash zone which collecting data. Stay in groups of a minimum of 3.

Evaluation:

My results for the drop in sediment size were reliable as we tested a number of groynes and calculated an average drop on each side of the groyne. My sample size was 10 groynes which is a large sample for the stretch of coast we investigated. Other groups in my class also came to the same conclusions suggesting that they are valid and correct. The results enabled me to make accurate conclusions on the success of the groynes in Hornsea.

However, I used a biased sample so other points along the same groynes may give the same results as I measured the point with the biggest difference. This reduces the reliability and validity of my results.

My results would have been more reliable if I had measured a number of points either side of each groyne and calculated an average drop size. This would show more accurately how successful the groynes are in reducing longshore drift.

Conclusions:

We concluded that the groynes are effective in reducing the impacts of longshore drift as the comparative bar chart shows that the sediment is consistently higher on the north side of the groyne (an average of more than 50cm). This shows that longshore drift comes from the south and the groynes are trapping the sediment, therefore reducing erosion.

Data Presentation Methods:

SEDIMENT DROP: Comparative bar chart – easy to construct and clear to see if there is a pattern/any anomalies etc. as it was colour coded with a key. Showed both sides of the groyne on one graph for easy comparison. However, the x axis only shows categories and the accuracy of the data can be skewed depending on the scale used on the y axis.