

ANALYSIS OF THE DISPERSION AND BOX AND WHISKER DIAGRAMS FOR THE AVERAGE DISTANCE FROM THE GROUYNE TOP TO THE SAND SURFACE FOR 10 GROYNES AT HORNSEA

Compete the analysis below :-

1. The dispersion diagrams for the north and south facing sides of the 10 groynes at Hornsea on the Holderness coast of Yorkshire confirm the evidence presented by the means /averages.

Complete the table below :-

	North facing	South facing
Mean cm cm
Median cm cm

2. This confirms that the distance from the top of the groynes to the surface of the sand is more / less on the north facing sides. Sand build-up on the north side proving that longshore drift is from north to south / south to north. The accumulation of sand on the beach at Hornsea takes place for two reasons. To absorb wave energy and help prevent erosion of the coastline, and to allow the town to function as a seaside resort.

3. There is one anomaly, however, groyne 3, where there is more sand on the south side than on the north sides. Can you explain this?

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4. The dispersion diagrams and box and whisker diagrams show that the distances (from top of groynes to sand surface) for the north facing sides of the groynes are not distributed evenly around the median value, with an inter quartile range of cm. Whereas the mean and median on the south side of the groynes are very similar at around cm, on the north side there is a large difference between the mean and median values of cm.

5. On the north side of the groynes the data is skewed by a tail of larger values which may be anomalies. This is for groynes 1, 2 and 3, where less sand than expected has built up to the north of the groynes. This gives a very large inter quartile range of cm, which shows a large spread of data. Can this be explained by you knowledge of those groynes or their position?

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