

Key Question – How effective are the coastal management strategies at Cleveleys coastline?

Erosion and transportation takes place at the coastline. It comes in many different forms. At Cleveleys, coastline longshore drift (LSD) is the main contributor to the shape of the coastline.

Suitability of location – Why choose this location?

There are a number of reasons why we can use Cleveleys for this investigation:

- It is easy to access.
- It is safe: there are paths and walkways.
- There are lots of types of coastal management strategies that can be investigated.

Management strategies at the coastline – How do we try to reduce the impact of longshore drift?

We reduce coastal erosion and transportation by using **management strategies** – at Cleveleys they use **groynes**. We can control the rates of erosion by creating structures or using nature to stop or reduce the amount of erosion at the coastline. **Groynes** work by trapping the sand as it travels along the coastline; once it gets stuck behind the groyne, the particles cannot be pulled back out to sea, leaving a build-up of sediment at the coastline. This beach can then absorb the energy of the wave and will reduce the impact of erosion.

Methods – How do we collect the data?

In order to identify whether the groynes are effective at Cleveleys, we can measure whether longshore drift is occurring and if it is being stopped.

At 3m from the coastline, we measured the depth of the material from the top of the groyne to the sand; to do this, we used a long tape measure. The results were recorded. This was done at both sides of the groynes. We repeated this at 5 groynes along the beach.



What are the risks of carrying out this fieldwork?

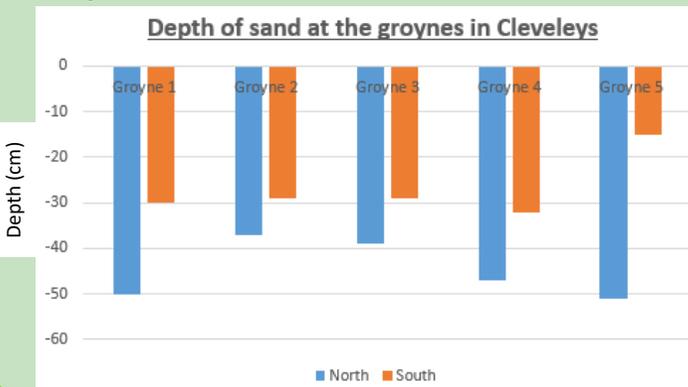
Risk	How can we reduce the risk?
Water risk – the risk of getting swept out to sea	Stay at least 5m away from the coastline at all times.
Trip/fall hazards	Students to walk carefully whilst watching where they are going. Students are not to climb on any of the management strategies.



KS3 Spine

Geographical Investigation – Physical Geography

Data presentation



Cleveleys is found on the north-west coast of the UK, in the county of Lancashire, north of Blackpool.



Results and analysis

We found that longshore drift is travelling in the direction of south to north and this can be seen on the reverse bar chart. The bar charts show a clear difference in the amount of sediment on the sides of the groynes, with higher levels of sediment on the south side of the groyne reaching a lower depth of 15 cm (groyne 1), and the sediment on the north side having a higher depth of 51 cm. For every set of results, we must **analyse** the data. Here we describe the results and then give reasons for the results. For instance, we could work out the **average** depth of material either side of the groyne, and then give reasons for the difference in height of material.

Conclusion

We found that longshore drift is being stopped at Cleveleys. This means that the groynes are effective in reducing the coastal erosion along the Cleveleys coastline.

Evaluation

What went well with this fieldwork?

- We obtained clear and accurate data that showed how effective the management strategies were, showing valid conclusions.
- The data was representative of how coastal processes work and how coastal management strategies prevent longshore drift.

What would we change if we did it again?

- We could measure more groynes to get a wider range of data.
- We could visit the site over a series of days to get an average.



Key Question – Do tourist functions decrease with distance from the coastline?

Blackpool is a town located in the north-west of the UK. It is in the county of Lancashire, close to the Irish Sea. Founded in the 1800s, Blackpool developed primarily as a tourist town, and people from all over the country visited the beach and amusement attractions.

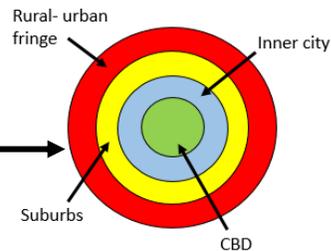


Suitability of location – Why choose this location?

- The area is easily accessible by all types of transport.
- The area is safe for students to carry out their own research.
- This is a typical layout of a tourist area so it will be clear for us to collect results.

Burgess Model

We are going to investigate whether Blackpool follows the same pattern as most towns and cities in the UK. The Burgess Model has a concentric ring pattern. Blackpool is on the coast so would be half of the Burgess Model.



Methods – How do we collect our data?

We can collect our data by creating a land use transect. Using a map, we can choose three sites in Blackpool: one in the central business district (CBD) - in this case at the sea front - and two others at equal distances as we move further from the centre.

At each site, we can record the function of each building. We will need a key:

Site 1 – City centre close to the sea front

Site 2 – Adelaide Street, at the back of the Hounds Hill Shopping Centre

Site 3 – Church Street, the main street that leads into Blackpool town centre from all the surrounding areas.

What are the risks of carrying out this fieldwork?

Risk	How can we reduce the risk?
Being approached by strangers	Stay in groups at all times. Keep a mobile phone on us with a school contact number stored for emergencies.
Road traffic – being hit by a vehicle	Be aware at all times. Stay on the pavement as much as we can and cross at crossings provided.

PiXL
Geography

KS3 Spine

Geographical Investigation – Human Geography



Evaluation

What went well?

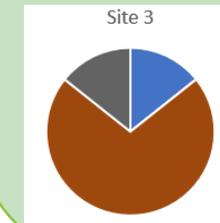
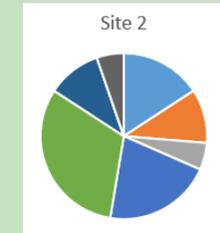
- The data collected follows the pattern shown in the Burgess Model so the study is representative of our theory, showing our results are valid.
- We collected enough data that it is all comparable to help solve the enquiry.

What would we change if we did this again?

- We could visit a greater range of sites.
- We could measure the quality of the environment at each site.
- We could take photographs at each site.
- We could have gone at different times, e.g. summer and winter.

Data presentation

Key:



Data analysis:

Once we have collected the results, we must analyse them. Here we have worked out some % changes in tourist function.

The pie charts show that there is a dramatic decrease in tourist function as we move away from the coastline, Blackpool's CBD. There are 70% more tourist land uses in the CBD (site 1) than in site 3.

At site 2, the most common (the mode) building functions are bed and breakfasts and hotels, which account for 80% of the buildings.

Site 3 sees an increase in residents from 0% at site 1 to 60% in site 3.

Conclusion

The results show clearly that tourist functions do decrease with distance from the coastline and that Blackpool does follow the Burgess Model.

From site 1 to site 3, the number of tourist functions decreased and the number of residential facilities increased. This follows the typical Burgess Model pattern.

In conclusion, we can confidently answer that:

*Tourist functions **DO** decrease with distance from the coastline at Blackpool.*

