

ENQUIRY QUESTION

# What is the impact of coastal management on beach characteristics?



- Why is Slapton Sands a good location to investigate **coastal management** and how different **management strategies** impact beach characteristics?

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You should add notes to this map from the StoryMap activity on the next page



Base map of Start Bay coastline, South Devon



Using the StoryMap found at <https://bit.ly/fieldworkliveCoasts>, find information to help you answer the following questions linked to your enquiry question.

- What management strategies or defences are present along Slapton Sands?

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- What coastal processes affect Slapton Sands?

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- How will these processes affect the beach characteristics?

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- How could coastal management affect beach characteristics?

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Extension: What sampling strategy would be most appropriate to collect data for this enquiry?

During the live lesson you will have an opportunity to ask the presenter questions about the **fieldwork** or the **geographical enquiry process**. Use this space to write down any questions you might want to ask:

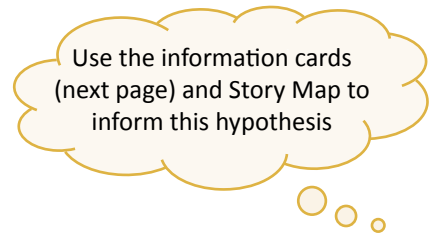
These questions can be submitted prior to the live lesson. Send your questions to your teacher to collate and submit them.





### Setting hypotheses

Complete the hypotheses statements below...



- 1. Hard engineering will **increase / decrease** the beach size.  
Select one and explain why you think this...

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- 2. The most effective coastal management would be...

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- 3. The area on Slapton Sands that has beach nourishment will have **smaller / larger** sediment than expected and the sediment will be **more angular / smoother** than expected. Select one from each option and explain why you think this...

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### Beach nourishment

Additional sediment is added to the beach to increase beach levels. This larger beach is an effective 'natural' way to absorb wave energy.



**Cost per m (£):** 10

**Aesthetics:** Natural beach

**Life span:** 5 years

**Benefits:** Still allows natural processes to occur. Provides additional input into the sediment cell. Quick construction.

**Issues:** Still allows natural processes to occur. Requires regular maintenance.

### Sea wall

A concrete wall is built that will stop waves reaching the area behind. Most walls are curved to reflect wave energy.



**Cost per m (£):** 6000

**Aesthetics:** Concrete

**Life span:** 100 years

**Benefits:** Prevents flooding and erosion.

**Issues:** Long construction process.

### Rip rap

Large rocks are added on top of the beach material to absorb wave energy.



**Cost per m (£):** 1000

**Aesthetics:** Natural rock

**Life span:** 25 years

**Benefits:** Still allows some natural processes to occur. Relatively quick construction.

**Issues:** Can be undermined or moved by large waves. Requires some maintenance.

### Managed Retreat

Areas are allowed to erode or flood with significant land uses being moved inland.



**Cost per m (£):** Varies – may be an initial cost to retreat land use but then no investment is needed.

**Aesthetics:** Natural landscape

**Life span:**

**Benefits:** Still allows natural processes to occur. Low cost. Natural landscape

**Issues:** Land is lost to erosion and/or flooding.



### Bipolar evaluation

- During the live lesson you will be asked to complete a bipolar evaluation of a coastal defence. Read the bipolar evaluation tables below to familiarise yourself with this method then design one additional category and add it to the last blank row of each table. This is the last task before the Live Lesson!

TYPE OF DEFENCE:							
	SCORE						
Negative	-3	-2	-1	1	2	3	Positive
Erosion still happens							Stops all erosion
Flooding still happens							Stops all flooding
Disrupts sediment movement							Allows sediment movement
Disrupts natural stabilisation (plant growth)							Allows natural stabilisation (plant growth)
Impacts sediment provision elsewhere							Does not impact sediment provision elsewhere
Lots of disturbance to beach during construction							Little disturbance to beach during construction
TOTAL SCORE =							

TYPE OF DEFENCE:							
	SCORE						
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