WORKBOOK

AQA A-LEVEL

Geography 1

PHYSICAL GEOGRAPHY

- Water and carbon cycles
- Hot desert systems and landscapes
- Coastal systems and landscapes
- Glacial systems and landscapes
- Hazards

- ✔ *Confidently prepare for assessment with exam-style questions*
- ✔ *Online answers to every question*

Philip Banks

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Contents

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Coastal landscape development

Coastal landforms and landscapes can be categorised into the following types:

- **Landforms and landscapes of coastal erosion.** These include cliffs and wave-cut platforms, and cliff profile features including caves, arches and stacks.
- **Landforms and landscapes of coastal deposition.** These include beaches, spits, tombolos, offshore bars, barrier beaches and islands, and sand dunes.
- **Estuarine mudflat/saltmarsh environments and associated landscapes.**

Sea levels are not static. Global sea levels have risen approximately 120 m since the height of the last ice advance 18,000 years ago. This has given rise to 'drowned' coastlines, including rias, fjords and Dalmatian coasts.

Some coastlines have risen locally, emerging from under the water. This forms emergent landforms, including raised beaches and marine platforms.

Predicted climate change (global warming and increasingly extreme weather events) could eventually lead to rising sea levels with greater coastal flooding and erosion, particularly along coastlines in the path of tropical storms.

Practice questions ?

22 Explain how the process of abrasion forms wave-cut notches at the base of cliffs.

Worked example

Wave-cut notches are found at the base of cliffs where there is a supply of abrasive material (shingle, pebbles, boulders etc.). This material could be derived from further along the coast by longshore drift, or it could be from the cliff itself following rock fall.

Knowledge (A01): The location of the notch is made clear as well as the source of the abrasive material.

At very high tides and during storms, waves are able to reach the base of the cliff. If they have sufficient energy, they are able to pick up some of the rocks and other material and hurl them, sometimes with great force, at the base of the cliff. As they hit the cliff, they chip away at the base. The waves can only move the stones when they (the stones) are within the body of water. Therefore, the abrasion only reaches as high as the wave crest, leaving the upper part of the cliff untouched.

Knowledge (A01): The process of marine abrasion is explained.

Knowledge (A01): Links the process to the height of the landform.

23 Figure 3.5 shows caves, arches and a wave-cut platform on the Yorkshire coast.

Figure 3.5 Selwicks Bay, Flamborough Head, Yorkshire

a Outline the sequence of events in the evolution of this coastline.

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b Although stacks are not present in the photograph, explain, how stacks could be formed at Flamborough Head.

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Exam-style set 1

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1 Outline **two** weathering processes that take place on coastlines. (AO1) **4 marks**

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2 Study Figure 3.10 (a) and (b). Using the figure and your own knowledge, assess the extent to which different types of waves have different effects on beaches. (AO1, AO2) **6 marks**

Figure 3.10 Contrasting wave types

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3 Study Figures 3.11 and 3.12. Analyse the information shown. (AO3) **6 marks** 7

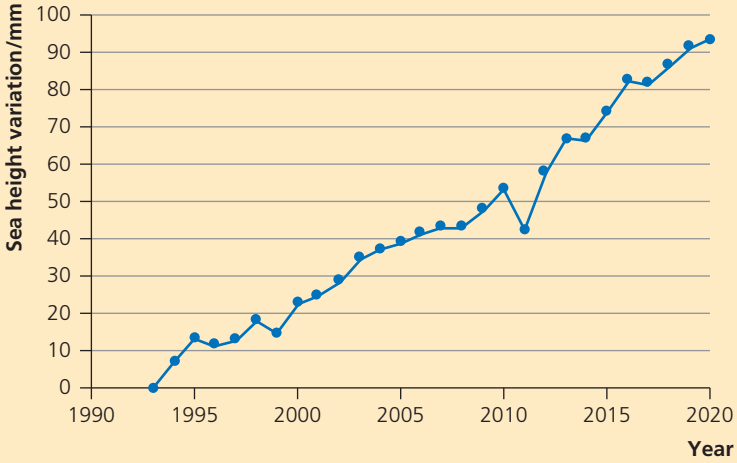

Figure 3.11 The variation in sea height from a base level set in 1993

Data from https://sealevel.nasa.gov/understanding-sea-level/key-indicators/global-mean-sea-level

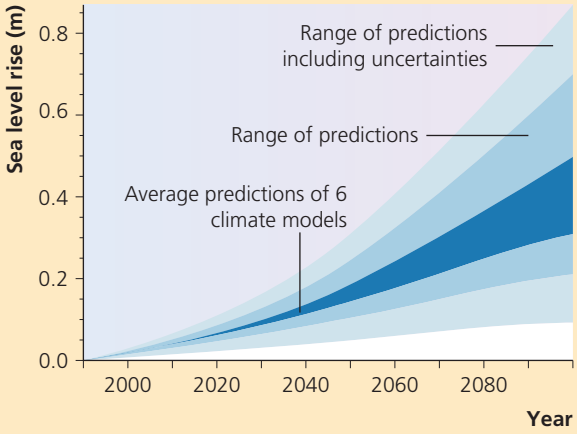

Figure 3.12 Range of possible predicted sea-level rise

Source: NASA Earth Observatory

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4 'Climate change presents both risks and opportunities for human occupation of coastlines.'

With reference to a named coastal landscape beyond the UK, to what extent do you agree with the above statement? (AO1, AO2) **20 marks** 25

Plan and write your answer on a separate sheet of paper and keep it with your workbook.