

**Revision Outline**

Physical geography: Coastal systems and landscapes

**3.1 Physical geography**

Core topic

3.1.3 Coastal systems and landscapes

| **Specification content and key ideas** | **Possible exam/revision questions** | **Self assessment** |
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| **1. Systems in physical geography**   * Systems in physical geography: Systems concepts and their application to the development of coastal landscapes: inputs-outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. * The concepts of landform and landscape and how related landforms combine to form characteristic landscapes. | Explain a negative feedback mechanism in the coastal system (4 marks) Hodder textbook  Outline how the coast functions as an open system. (4 marks) Oxford  With reference to depositional landforms on the coast, explain the concept of dynamic equilibrium (6 marks) Oxford  ‘The coastal system is as much shaped by its links with other physical systems as it is by flows and transfers within itself’. Assess the value of this statement (6 marks) Oxford |  |
| **2. Systems and processes**   * Sources of energy in coastal environments: winds, waves (constructive and destructive), currents and tides. Low energy and high energy coasts. * Sediment sources, cells and budgets. * Geomorphological processes: weathering, mass movement, erosion, transportation and deposition. * Distinctively coastal processes: marine: erosion – hydraulic action, wave quarrying, corrosion/abrasion, cavitation, solution, attrition; transportation: traction, suspension (longshore/littoral drift) and deposition; sub-aerial weathering, mass movement and run off. | ***Outline the role of wind in affecting coastal energy (3 marks) Specimen assessment material - Paper 1 AQA AS level***  **Assess the importance of different sources of energy in the creation of coastal landscapes (9 marks) *Specimen assessment material - Paper 1 AQA AS level***  ***Outline characteristics of constructive waves. (3 marks) Paper 1 - June 2017 AS level***  ***Assess the view that wind is the biggest factor in determining the impact of energy in coastal environments. (9 marks) Paper 1 – June 2017 AS level***  Outline characteristics of high energy coasts. (3 – AS 2019)  ***Outline the role of weathering in the development of some coastlines (3 marks) Hodder workbook***  ***Using Figure 7 and your own knowledge, assess the role of mass movement upon the development of this area of the Holderness coastal landscape (6 marks) Specimen assessment material – Paper 1 AQA A level***  Outline the role of waves in changing coastal landscapes (3 marks)  Outline factors that affect the energy of waves (4 marks)  Explain why material is deposited within the coastal environment (4 marks)  Outline the role of waves in the transportation of sediments at the coast. (4 – A level 2021)  Outline the process of sub-aerial weathering in the development of coastal landscapes. **[4 marks] A level 2020**  Outline the process of coastal hydraulic action.(3) AS 2020  Assess the contribution of mass movement in shaping the landscape of a coastline you have studies (9 marks) Oxford  ‘Subaerial processes are far more important in creating distinctive coastal landscapes than marine processes’. To what extent do you agree with this statement? (20 marks) Cambridge |  |
| **3. Coastal landscape development**  This content must include study of a variety of landscapes from beyond the United Kingdom (UK) but may also include UK examples.  **Erosional landforms**   * Origin and development of landforms and landscapes of coastal erosion: Cliffs and wave cut platforms, cliff profile features including caves, arches and stacks; factors and processes in their development.   **Depositional landforms**   * Origin and development of landforms and landscapes of coastal deposition. Beaches, simple and compound spits, tombolos, offshore bars, barrier beaches and islands and sand dunes; factors and processes in their development. * Estuarine mudflat/saltmarsh environments and associated landscapes; factors and processes in their development.   **Sea Level Change and Landforms**   * Eustatic, isostatic and tectonic sea level change: major changes in sea level in the last 10,000 years. * Coastlines of emergence and submergence. Origin and development of associate landforms: raised beaches, marine platforms; rias, fjords, Dalmatian coasts. * Recent and predicted climatic change and potential impact on coasts. * The relationship between process, time, landforms and landscapes in coastal settings. | ***Assess the role of erosion in the formation of the coastal landscape shown in Figure 3.4 (6 marks) Hodder workbook***  Explain the contribution of lithology to landscapes of coastal erosion (4 marks) Oxford  Assess the importance of wins and waves in the creation of one distinctive coastal landscape (9 marks). Take care – it says landscape and not landform. Hodder textbook  Explain the differences between landforms found along high and low energy coasts, using examples you have studied (6 marks) Oxford  For a feature of either coastal deposition or coastal erosion, explain its formation using the concept of the coastal system. (6 marks) Cambridge  Outline the role of river estuaries in shaping depositional landforms along the coast (4 marks)  Explain why the coastal landscape of one section of the coast may be very different to that of another section 150 miles away despite the coastline consisting of a similar rock type. (9 marks) Cambridge  Explain the development of saltmarsh environments (4) – A Level 2019  Assess the view that tides are the most important factor in the development of mudflats in estuarine environments. (9) AS 2019  Human activity always has a negative impact on the development of landforms of coastal deposition.’ To what extent do you agree with this view? (20) AS 2019    ***Study Figure 3.6. Describe the coastline and assess the role played by sea-level change in the formation of this coastline (6 marks) Hodder workbook***  ***To what extent do major changes in sea level in the last 10,000 years contribute to the development of landforms such as raised beaches, marine platforms, rias, fjords and Dalmation coats? (9 marks) Hodder workbook***  ***Explain the concept of eustatic sea level change (4 marks) Hodder workbook*** |  |
| **Coastal management**  Human intervention in coastal landscapes.   * Traditional approaches to coastal flood and erosion risk: hard and soft engineering. * Sustainable approaches to coastal flood risk and coastal erosion management: shoreline management/integrated coastal zone management. | ***‘No amount of coastal intervention by people can halt the natural processes which continue to present potentially serious risks to coastal communities now and even more so in the future.’ To what extent do you agree with this view? (20 marks) Specimen assessment material – Paper 1 AQA A level***  ***Using Figure 3 and Figure 4, assess the extent of the flood risk in the area shown. (6 mark) Specimen assessment material – Paper 1 AQA AS level***  **‘Coastal flooding and erosion will become a more common occurrence over the coming decades.’ To what extent do you agree with this view? (20 marks) *Specimen assessment material – Paper 1 AQA AS level***  ***‘Shoreline management/integrated coastal zone management can effectively tackle the expected eustatic sea level change and associated threat to coastal landscapes over the coming decades.’***  ***To what extent do you agree with this view? – 20 marks(A level 2019)***  ‘During the 21st century climate change will make the costs outweigh the benefits of using traditional hard engineering approaches to coastal flood and erosion risk.’ To what extent do you agree with this view? (20 marks) Hodder textbook  Evaluate the effectiveness of contrasting coastal management strategies (6 marks) Oxford  Assess the relative advantages and disadvantages of using soft engineering coastal protection methods (9 marks) Cambridge  To what extent can coastal management schemes be considered both effective and sustainable? (20 marks) Cambridge |  |
| **Case study 1**  Case study(ies) of coastal environment(s) at a local scale to illustrate and analyse fundamental coastal processes, their landscape outcomes as set out above and engage with field data and challenges represented in their sustainable management.  **Case study 2**  Case study of a contrasting coastal landscape beyond the UK to illustrate and analyse how it presents risks and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaption. | To what extent can an understanding of feedback systems help with the management of **one or more** coastal landscapes that you have studied? (20 marks - 2021)  **With reference to a coastal environment at a local scale, assess the predicted impact of climate change upon the landscape. (20) A level 2020**  ***How far do you agree that human activity has a greater role than natural processes in shaping coastal landscapes? (20 marks) Paper 1 – June 2017 AS level***  ***To what extent does climate change present risks and opportunities for human occupation in a named coastal landscape beyond the UK? (20 marks) Hodder workbook***  ‘Climate change in the 21st century will mean that the risks will outweigh the opportunities facing people living in a coastal area. With reference to a coastal area beyond the UK that you have studied, to what extent do you agree with this view? Hodder textbook  Which three coastal processes would you argue have the biggest impact in the evolution of the Holderness Coast? (9 marks) Cambridge  To what extent is human activity contributing to the developing profile of the Holderness Coast. (9 marks) Cambridge  ‘Much of the handwringing over sea level rise is precisely because so much of the world’s population live near the ocean’. For a coastline(s) you have studied, analyse the respective roles of resilience, mitigation and adaptation in maintaining coastal communities  ***To what extent does increasing globalisation affect the sustainable management of coastlines (20 marks) Hodder workbook***  With reference to a coastal landscape beyond the UK, assess the view that predicted climate change will only lead to negative impacts on the coastal area.  **[20 marks] AS 2020** |  |