Lesson 2 - Worksheet 2

Future coastal management at Hurst Spit and Keyhaven

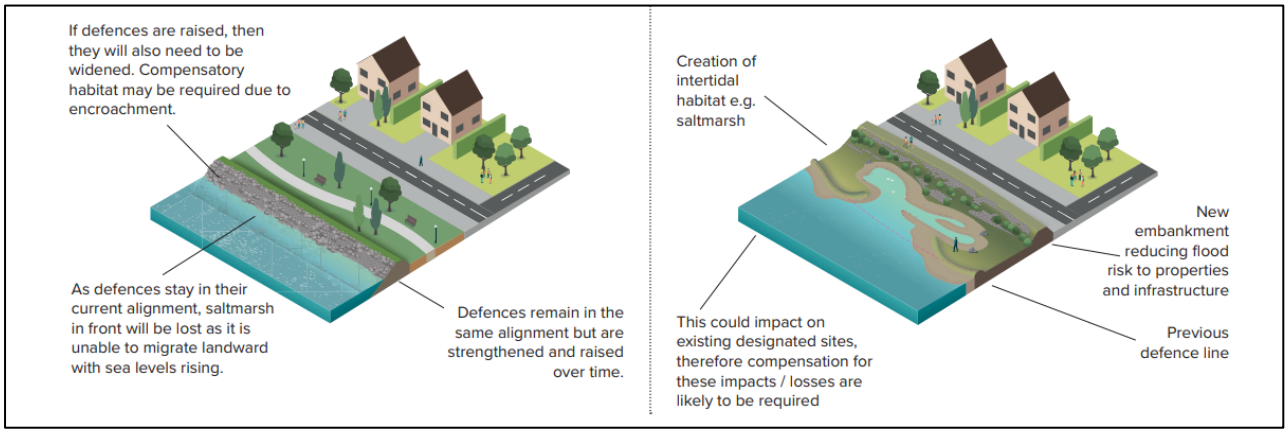
Threatened by sea level rise, increased storminess and coastal squeeze, Hurst Spit and Keyhaven face an uncertain future. Hurst Spit plays an important role in protecting Keyhaven from flooding and in maintaining the richly biodiverse wetlands and intertidal habitats. The fifteenth century historic castle is also at risk.

However, the construction of expensive defences, such as seawalls and rock revetement, is unsustainable in places. The long-term solution lies in working with the natural changes that will occur, working with nature rather than against it.

The Hurst Spit and Lymington Strategy aims to create a sustainable future for the 15km stretch of coast between Hurst Spit and Lymington for the next 100 years. The coastline has been divided into several units, each with its own management pathway.

1. The diagram below illustrates the coastal management options of 'hold the line' and 'managed realignment'.

Hold the Line **Managed realignment**



(a) Suggest why 'hold the line', may be the preferred option along some stretches of coast.

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(b) Explain why 'hold the line' can result in the loss of saltmarsh. Use the term 'coastal squeeze' in your answer.

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(c) Describe the likely changes to the coastline in the diagram if the strategy of 'managed realignment' is chosen.

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(d) Explain why 'managed realignment' is the more sustainable option.

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(e) If you were one of the homeowners in the diagram, which strategy would you prefer? Explain your answer.

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The long-term sustainable management of Hurst Spit and Keyhaven involves 'managed realignment'. This means the coastline will be allowed to evolve naturally leading to ultimately minimal intervention.

2. The table below summarises the proposed coastal management pathways for Hurst Spit and Keyhaven.

	Short-term	**Medium-term**	**Long-term**
Hurst Spit	'Hold the Form'	'Rollback – reactive management'	'Rollback – minimal intervention'
	Beach nourishment to maintain the current height and width of the spit	Limited maintenance to retain barrier. Allow the spit to become lower and wider.	Allow the spit to evolve naturally with minimal intervention
Keyhaven	'Managed Realignment'		
	Construction of new embankment inland of the current embankment	Controlled breaching of the existing embankment to allow the sea to flood the land	New, wider saltmarsh develops benefiting wildlife and naturally protecting the coast from flooding. Allows saltmarsh to migrate inland with sea level rise.

[Text in red to be removed to create empty boxes for students to complete.]

(a) Use the information in the PowerPoint presentation to complete the empty boxes in the table.

(b) Suggest why the strategy 'Hold the Form' is the preferred short-term option for Hurst Spit.

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(c) Using a diagram, suggest how the profile (height and width) of the spit is likely to change in the long-term.

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(d) Draw a labelled diagram to explain the 'Managed Realignment with Saltmarsh Creation' pathway that is proposed for Keyhaven.

3. In common with all forms of coastal management, there are costs (disadvantages) and benefits (advantages). Complete the table below to identify costs and benefits of the proposed pathways for Hurst Spit and Keyhaven.

	Costs (disadvantages)	Benefits (advantages)
Hurst Spit 'Hold the Form - Maintain'		
Hurst Spit 'Rollback – Reactive Management' and 'Rollback – Minimal Intervention'		
Keyhaven 'Managed realignment with saltmarsh creation'		