

14 Coastal management 2

Cuckmere Haven, Sussex

The River Cuckmere flows through East Sussex from its source in the Weald to the coast between Eastbourne and Seaford (Figure 1). The Cuckmere Valley and especially the estuary is of national importance for its wildlife and heritage. Much of the lower course of the river lies in the Sussex Downs Area of Outstanding Natural Beauty.

One of the characteristic features of the river as it reaches the sea are its sweeping meanders (Figure 2) which almost double-back on each other. These meanders have been cut off by an artificial channel that was constructed in 1846 to improve navigation. Water flow is controlled by sluice gates, which maintain the water levels in the meanders. The area is very popular with walkers and naturalists and the meandering channel itself is well used by canoeists.

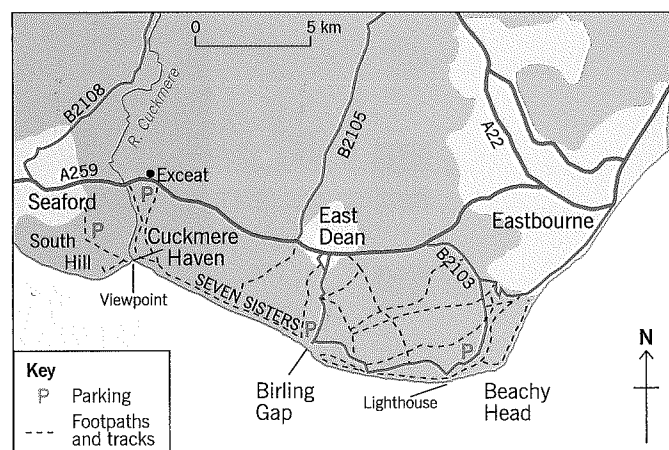
The main problem facing the area is from flooding. The floodbanks alongside the river are in need of repair and, in order to cope with rising sea levels and increased storminess associated with global warming, the costs involved would run to well over a million pounds. Additionally the process of longshore drift is continually blocking the estuary, leading to potential problems of upstream flooding.

An alternative more sustainable approach called 'managed retreat' has been put forward by the Environment Agency. The plan allows for some controlled flooding to take place to the west of the river, effectively turning pasture land into salt marsh. The river meanders would be restored and the river estuary as a whole would be encouraged to revert to its natural state. In the long term, rare intertidal habitats such as salt marshes and mudflats would be restored and the increased flow would create a self-cleansing system.

Whilst such a scheme might have significant benefits to wildlife, some local people are concerned about the proposed changes. A major footpath to the west of the river will be diverted, thus reducing access. For some years, the area will become a muddy wasteland until vegetation takes hold. The owners of the cliff-top houses to the west of the river mouth fear increased rates of erosion. Despite the understandable opposition, future management of estuaries and coastlines will have to be more sustainable in the future, particularly as sea levels continue to rise.

Activities

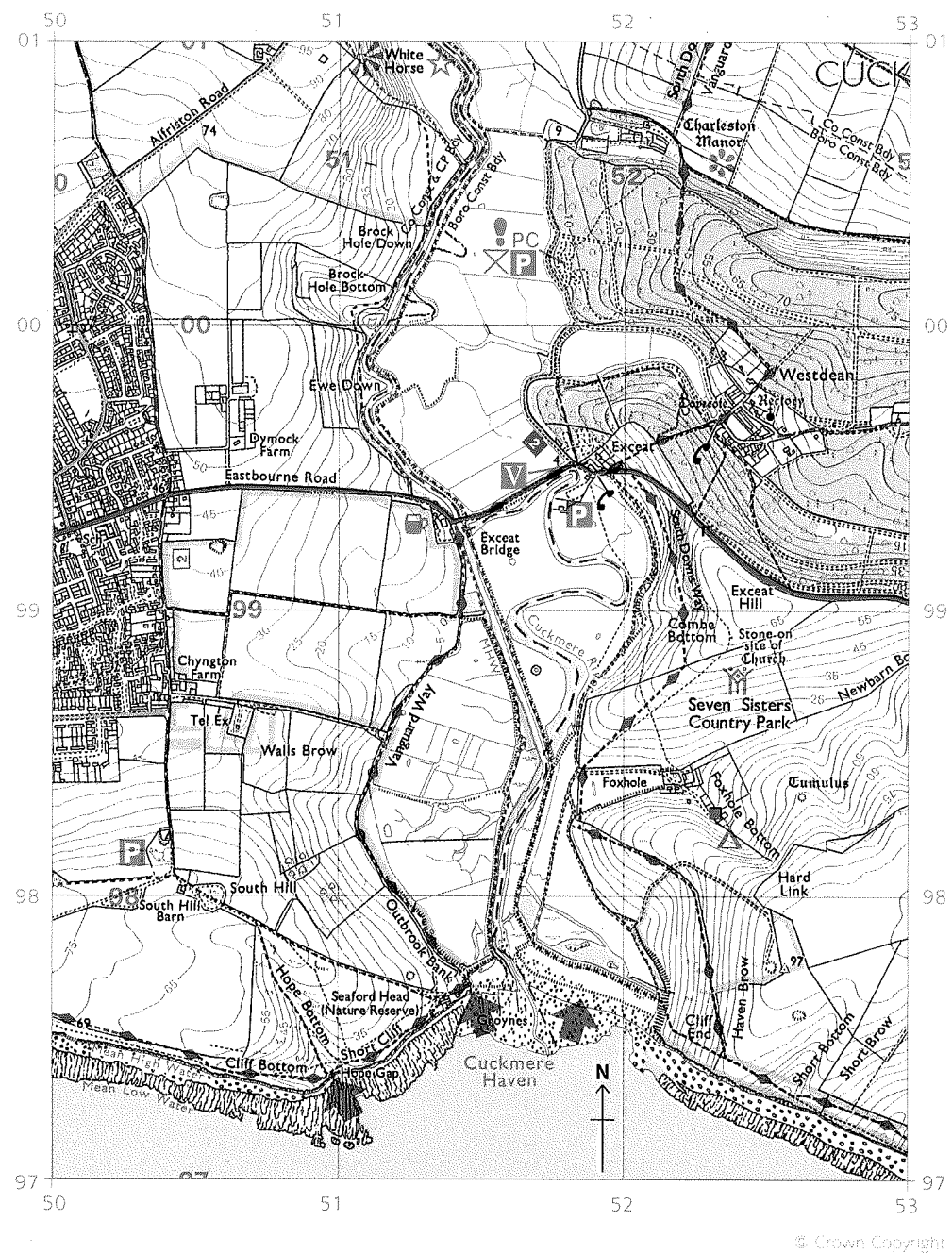
- 1 Study Figures 2 (photo) and 3 (map).
 - a In which direction is the photograph looking?
 - b What is the name of the bridge at B?
 - c What is the six-figure grid reference of the car park shown on Figure 2?
 - d What is the name of the footpath at F?
 - e What is the meaning of the three large red arrows on the shore?
 - f What is the length, to the nearest 100 m, of the straight channel between the bridge (B) and C?
 - g Locate grid square 5100. What is the evidence that the River Cuckmere used to follow a meandering course? Draw a simple sketch map to support your writing.



1 Location of Cuckmere Haven

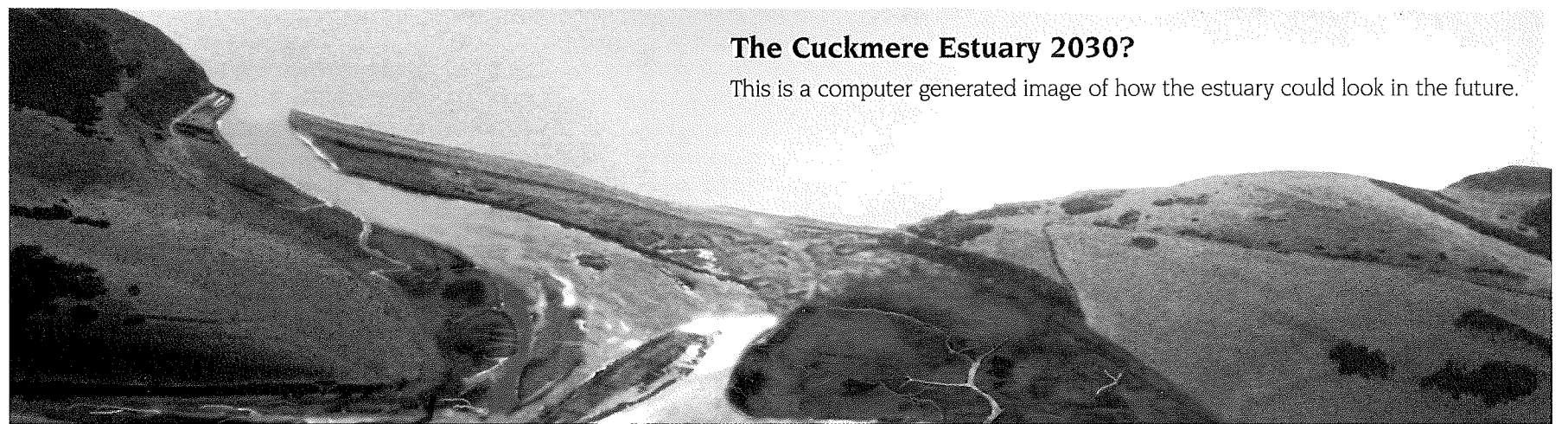


2 Cuckmere Haven in 2006



3 1:25 000 map of Cuckmere Haven

- 2 Study Figure 3.
 - a Draw a cross-section across the Cuckmere valley. Take a line of section along the 99 grid line from 507990 (the 35 m contour) to the top of Exceat Hill at 525990. Choose an appropriate vertical scale (e.g. 1 cm = 20 m).
 - b Locate and label Vanguard Way, the straight river channel, the meander, the river floodplain and Exceat Hill.
 - c Write the grid references above each axis and give your cross-section a title. Write the heights alongside one of the axes and show the horizontal scale.
- 3 Study Figure 3.
 - a What evidence is there on the map that the area is popular with visitors?
 - b How might conflicts arise between different interest groups?
- 4 Study Figure 4. It shows what the area might look like in the future if it is allowed to flood.
 - a Draw a simple outline sketch to show the main features.
 - b With careful reference to the map (Figure 3), identify some of the changes to the river and its valley that might take place by 2030. Annotate your sketch map to describe these changes.
- 5 The plan to allow the Cuckmere estuary to flood is very controversial.
 - a Consider the advantages and disadvantages of the proposed scheme and present this information in the form of a table.
 - b Do you think the scheme should go ahead or should the money be spent on reinforcing the current flood defences? Justify your decision.



The Cuckmere Estuary 2030?

This is a computer generated image of how the estuary could look in the future.