

Session 2

● What is the cause of the distinctive striping of Hunstanton's cliffs?

Have a look at these drone films made by Martyn Fordham (permission kindly provided).

Drone Film 1: <https://vimeo.com/243676849>

Drone Film 2: <https://vimeo.com/243677248>

What do you notice about the cliffs and the foreshore?

Make a list of the human and physical features you can see in the drone films.

What evidence of weathering / erosion can be seen in the films?

What structures are under threat if this erosion carries on for years to come?

What evidence of coastal protection is there?

Draw a sketch map of the area shown in the drone films, as seen from above. Start with a line showing the area of the cliffs themselves, and build in the detail. You may want to view the films more than once.

Drones are being increasingly used for fieldwork, and can also 'communicate with' an ESRI app called Drone2Map <http://www.esri.com/products/drone2map>.

You will find other local drone footage via YouTube.

Be aware of regulations and other safety aspects of using Drones.

There are three stripes, but the geology of the cliffs is still quite complex. Read the description by Tim Holt-Wilson, from a guide which can be downloaded by following the link provided in the References section. Other geology guides are also available.

A spectacular view of the relationship between the Lower Cretaceous formations and the Upper Cretaceous Chalk can be seen at Hunstanton Cliffs, just outside the AONB, where a relatively thin Red Chalk layer and the white Lower Chalk can be seen above the Carstone.

What three rocks are the cliffs made of?

What are the geological characteristics of the three rocks involved in the cliffs?

What is the structure of these rocks like?

How does the rock type influence the way that the rocks are eroded, and at what rate?

Geology: iGeology app or MySoil or <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

The Geology of Britain viewer allows students to investigate the geology of an area. Each shaded area represents a different rock type, and clicking on it reveals the detail. Bedrock and/or superficial deposits can be viewed.



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Use the image below to produce a 'field' sketch of the cliffs. See this online resource, which explains how to draw a field sketch: <https://www.bbc.co.uk/education/guides/zqk7nbk/revision/6>



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The cliffs are a popular attraction and well known. This website shows how, in 2014, a poll placed the cliffs in the top sites of geological interest in the UK.

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<http://www.edp24.co.uk/news/environment/hunstanton-cliffs-named-in-the-top-10-for-people-s-favourite-geology-sites-in-the-uk-1-3806592>

For a more detailed geological background to the cliffs, download this PDF from DEFRA.
<http://jncc.defra.gov.uk/pdf/gcrdb/GCRsiteaccount220.pdf>

At Hunstanton Cliffs the strata are superbly exposed, and there is a spectacular and dramatic colour contrast between the rusty brown Carstone, the brick-red Hunstanton Red Chalk Formation ('Red Chalk'), and the overall white and grey colours of the Ferriby Chalk Formation (Figure 5.7). A very gentle easterly dip brings the base of the Upper Cretaceous succession to beach level at St Edmund's Point. Between here and New Hunstanton, the Ferriby Chalk is generally inaccessible, except beneath the lighthouse, where it is possible to reach weathered exposures of most of the succession by climbing a former cliff-fall. The various components of the succession can, however, be readily examined in huge fallen blocks on the beach, many of which are sea-washed and reveal sedimentary details that are not easily seen in the cliffs.

Extracted from the Geological Conservation Review You can view an introduction to this volume at <http://www.jncc.gov.uk/page-2731> © JNCC 1980–2007 Volume 23: British Upper Cretaceous Stratigraphy Chapter 5: Northern Province, England Site: HUNSTANTON CLIFFS (GCR ID: 220)

Fieldwork guidance

Visiting school groups would need to have carried out a **risk assessment** and guidance on the nature of the cliffs and the risks of approaching them. There are fairly regular collapses in the area, as seen in the images, and students / visitors should be discouraged from approaching or climbing any part of the cliffs.

Create a series of questions that you could ask a resident of Hunstanton (perhaps living along the roads above the cliffs), and then a visitor to the town. These questions need to be used to investigate whether the perception of the risk of erosion is different between these two groups.

Residents are stakeholders: people who would have an opinion on an issue. What other stakeholders would there be in this case?

Some of these will be listed in Session 5

Here is a possible structure for the write-up of a fieldwork visit. It was produced by Amy Searle for Rivers work, but it can be easily adapted for other topics. [Link to document on TES Resources.](#)