Session 5

Royal Geographical Society with IBG
Advancing geography and geographical learning

How are the cliffs managed, and what are the possible, probable and preferable futures for them?

"The cliffs have never been defended, there's never been any measure to prevent erosion. We know they're eroding by about a foot a year." Jaap Flikweert, Engineer

There are a number of geomorphic processes which affect all cliffs and coastal landscapes.

Geomorphic processes are those which are responsible for shaping landscapes. They include weathering, mass movement, erosion, transportation and deposition. These processes require management.

Coastal Management
There are several options for managing eroding cliffs. These include hard engineering and soft engineering options, or a combination of the two. The erosion rates at Hunstanton are relatively low, as was discussed in Session 3. This means that there are no hard engineered defences along the bottom of the cliffs, although the promenade to the south of the cliffs starts before the end of the exposed section of chalk. To the north, the lower layer of chalk dips underground, and the sand dunes begin, which extend towards Old Hunstanton (the site of the original town before the Victorian expansion).

There is one small-scale management intervention undertaken on the beach by 'Rocky' or Malcolm Kennedy, which is worth finding out more about.

Hunstanton Cliffs do have an individual management scheme, which is entirely unofficial and has been going for some time. Take a look at the image below which was taken in October 2017 by the author of this resource. You may be able to notice that the rocks are piled up in the same colour. This is not accidental. They have all been placed there by one man.

Read about Malcolm's twenty-year long individual crusade here:
http://www.bbc.co.uk/news/uk-england-norfolk-26717566

Question to consider
Do you think that the efforts of Malcolm have slowed down the erosion rate, had little or no effect, or actually speeded up the erosion rate? Explain your thinking behind your chosen answer.

The role of the Environment Agency
The construction and maintenance of coastal defences is the role of the Environment Agency.
http://apps.environment-agency.gov.uk/wiyby/134808.aspx

They have provided some useful mapping, which could be used to explore the risk from coastal flooding. Search for Hunstanton in the box on the right hand side of this map:
http://apps.environment-agency.gov.uk/wiyby/134831.aspx

They tend to choose one of four available management options, which should already be familiar to you:
1. Hold the line – hold the existing defence line
2. Advance the line – additional investment
3. Do nothing – no active intervention
4. Retreat the line – managed realignment (used to be called managed retreat) and has been used successfully on low lying areas of coastline

There will also be some areas of coastline where information is not currently available; these also appear on the map.

Sections of coast have their own Shoreline Management Plans (SMPs)
SMP4 and 5 feature Hustanton at their extreme edges
https://www.gov.uk/government/publications/shoreline-management-plans-smps/shoreline-management-plans-smps

SMPs identify the most sustainable approach to managing the flood and coastal erosion risks to the coastline in the:

- short-term (0 to 20 years)
- medium term (20 to 50 years)
- long term (50 to 100 years)

Explore the resource and identify what the likely impact of erosion will be on these cliffs. Produce a map to show any areas that are likely to be impacted by change.

What is the future for the cliffs?
So let's look now at the future for Hunstanton Cliff, given what we now know about them.

Identify the current Environment Agency decision for the Hunstanton Cliffs area. What are the possible implications of this for those people who use the beach below the cliffs, or own or rent property above them?

Stakeholders
Stakeholders are those people who have a stake in, and therefore an opinion on, the outcome of a particular issue. As geographers, we need to be aware of the differing opinions on most issues, and the way that spatial issues come into this. Data are used by some stakeholders to support or justify their opinions, or add backing to something they want to say. Here are some suggested stakeholders:

Residents
Borough Council of King's Lynn and West Norfolk: https://www.west-norfolk.gov.uk/
Hunstanton Bowling Club
Property or business owners

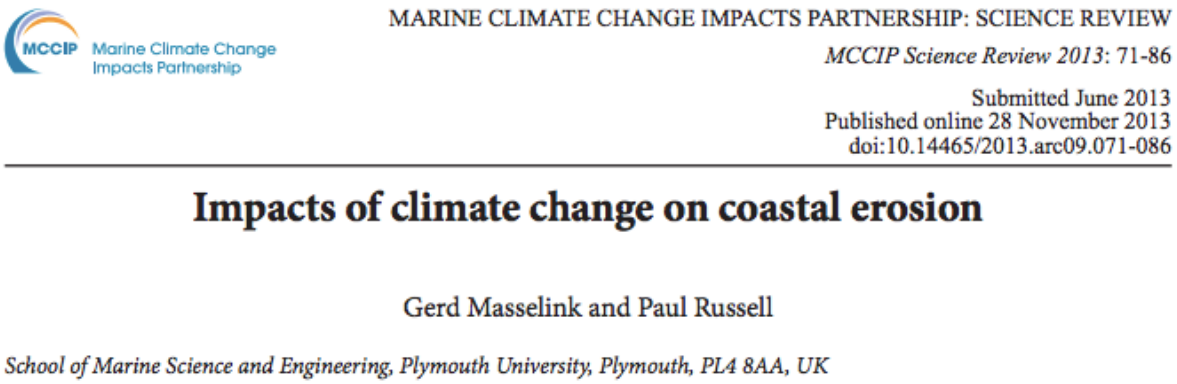
Geographers tend to consider what might happen in the future. When doing this, they need to consider the Possible, Probable and Preferable futures of decisions they are thinking about.

Possible: Given current situation, what could possibly happen in the future. This is the broadest option as it involves anything that could happen, even if it is improbable.

Probable: Using the most likely of the possible futures, to narrow down to what is most probable.

Preferable: What we would prefer to happen. This might represent the most optimistic or realistic of the scenarios that we have, or an alternative, and may be subject to change over time (as are the other options)

Have a look at pages 7-13 of this report https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/340816/Final_Wash_East_consultation_document_final_180714.pdf and the excellent article on the impacts of Climate change on coastal erosion, written by Gerd Masselink and Paul Russell.



MCCIP Marine Climate Change Impacts Partnership

MARINE CLIMATE CHANGE IMPACTS PARTNERSHIP: SCIENCE REVIEW

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Impacts of climate change on coastal erosion

Gerd Masselink and Paul Russell

School of Marine Science and Engineering, Plymouth University, Plymouth, PL4 8AA, UK

It can be downloaded from this link:
http://www.mccip.org.uk/media/1256/2013arc_sciencereview_09_ce_final.pdf

Download the Hunstanton Cliffs Futures document from the RGS-IBG website and fill it in using the information you now have on the likely impact of climate change on this stretch of coastline.

Further details of pressures on this coastline are included in the accompanying Pressures for Change map produced by the local AONB organisation.

Extension
What is the flood risk for Hunstanton?

A series of maps has been created and shared by Parallel. This is a data visualisation and mapping company that has shared some of the tools it has developed for clients. Visit: https://parallel.co.uk/

First of all, access these maps:
https://parallel.co.uk/rofrs/#10.45/51.1557/-2.8522

What is the flood risk like in the area close to the cliffs, compared to those parts of the town which are further south of the cliffs? What are your observations on the reasons for this?