

The Evolving Exe

It's easy to think that our local coastline has always looked like it does now. In fact, the Exe Estuary coastline has evolved over thousands of years. Storm waves, high spring tides and gale force winds have battered our coast, resulting in erosion of cliffs and beaches, whilst on-going coastal processes like longshore drift, river and tidal currents move sand and sediments around on a major scale. Land reclamation, housing development, construction of flood defences and transport links have also all played their part in shaping the coastline that we know and love today.



Exmouth 1928 - Showing changes at The Point, Exmouth, and no Imperial Recreation Ground. Note also houses clearly visible on the end of Dawlish Warren (source English Heritage)



Dawlish Warren 1946
(above) and **1975** (left)
(source Environment Agency Archive)

Built coastal defences, such as sea walls and rock armour help to reduce the risk of tidal flooding to people and properties and can help those living in coastal communities to feel protected. However, they act as a physical barrier, preventing the coastline from evolving in response to natural processes. This can cause 'coastal squeeze' where coastal habitats, like saltmarshes, are prevented from moving inland in response to storms or rising sea levels, and so are reduced in area over time. Sometimes we cannot sustain our defences because the supply of beach material is changing or because the natural forces of erosion become too great to resist.

As the habitats in the Exe Estuary are designated under European law we must not only protect people but also safeguard its special environmental features. This means we have to take a more natural approach to managing coastal flood and erosion risks in the future, by providing new habitat if any is lost due to 'squeeze'. This is called compensatory habitat and it has already been created in many estuaries around the UK, such as in the Humber, and more locally at a smaller scale in Devon on the Rivers Axe and Avon.

Looking forward

A Strategy for the management of flood and coastal erosion risks around the Exe Estuary is being developed by the Environment Agency in partnership with other authorities. We need to prepare now for the likely effects of climate change which are expected to include a rise in sea level of over 700 mm during the next 100 years.

Our studies show that continuing to defend communities such as Exmouth, Dawlish and Starcross, and infrastructure including the railways, will cause the loss of important designated habitat around the estuary. This loss will happen as existing habitats are 'squeezed' against our coastal defences and so reduce in size because they cannot move inland. We are looking at options to create new inter-tidal habitats, such as mudflats, around the estuary. In the Kenn Valley and Lower Clyst valley some land which used to be prone to flooding before floodbanks might be suitable. We are speaking with local partners and landowners to try to gain agreement over the scale and location of potential new habitat sites.

Our studies also confirm that Dawlish Warren sand spit is continuing to evolve as a result of natural coastal processes. These changes are likely to accelerate under the effects of climate change. The sand spit currently shelters parts of the inner estuary but this is unlikely to continue in the long term, as sea levels rise. We must, therefore, begin to plan for the future. As sea levels rise it will become more and more costly to prevent erosion of the Warren. Continuing to maintain existing flood defences here will also mean that the site fails to meet its conservation objectives, protected by European law. Instead we need to ensure that flood and coastal defences here develop in pace with the natural changes to the Warren.

Our aim is for the Strategy to protect communities against flooding and the effects of climate change whilst also ensuring a healthy and sustainable natural environment. We are working with local interests to develop options that meet this aim, now and for the future.

We welcome views on the emerging draft Strategy and options will be available for public comment by early autumn 2012.

There will also be opportunities to have your say during the formal 12 week consultation period, planned for early 2013.

How do I find out more?

- You can visit the Environment Agency website www.environment-agency.gov.uk/homeandleisure/floods/121323.aspx which will be updated as new information becomes available. A number of fact sheets can be found on this website, which give more detail about different aspects of the Strategy.
- You can send comments or queries to the Strategy Development Team at ExeEstuaryStrategy@atkinsglobal.com
- You can contact Martin Davies at the local Environment Agency office on 01392 354133.

You may hear about the Strategy through various routes because the Environment Agency is working closely with local authorities and with overarching groups such as the Exe Estuary Management Partnership. More information about this can be found at www.exe-estuary.org/

The new Living with a Changing Coast (LiCCo) project, aims to help communities to better understand and adapt to change to the coastline, including being more involved in developing options to manage the coast. Please contact jane.lavick@environment-agency.gov.uk, 07917 238309 if you would like to find out more.

There will be opportunities to find out more and to comment, including an exhibition before the Strategy is finalised in 2013

