

New research by Plymouth University on coastal change along part of the East Devon coast.

## Frequently Asked Questions

### **What's this about in a nutshell?**

The University of Plymouth have undertaken research that gives new predictions of coastal change. This indicates that, if erosion rates continue as they have for the past 20 years, more properties may be at risk of coastal erosion than previously thought. These 'frequently asked questions' help to explain why new coastal change maps have been produced and what it might mean for future plans.

### **What is coastal change?**

Our coastline is constantly altered by waves, tidal currents and the changing climate. Coastal change is the term used to describe any permanent physical change to the shoreline caused by processes such as erosion, landslip or flooding. It is anticipated that climate change will create increasing pressure on coastal and estuarine environments.

### **What is the national approach to dealing with coastal change?**

The emphasis is on working with natural processes to adapt to coastal change rather than trying to prevent it. Local authorities are expected to identify the areas at risk of coastal change within 100 years and to use their planning powers to carefully control what is built and to allow development to move to a safer location where feasible.

### **Can coastal change be predicted?**

To a degree, yes. This is the most accurate and up to date prediction, which has been produced using multiple data sources, agencies and expert judgement, but there is no guarantee that we can anticipate exactly what will happen in a local area and in what timescale.

### **How is coastal change predicted at the moment?**

The government advises local authorities to use the shoreline management plan (SMP) as the main source of evidence for identifying areas at risk of coastal change. The SMP is a large-scale assessment of the risks associated with coastal processes and includes maps showing the expected shoreline position in 0-20 years, 20-50 years and 50-100 years (short, medium and long term). In East Devon the SMP does not show any significant loss of property or infrastructure in the short term, although it was adopted in 2011 and so we are already half way through the first 20 years and it is currently being refreshed to include the latest projections for climate change and sea level rise.

### **Why is a new approach being considered?**

The SMP took a broad brush approach in order to achieve national coverage so it did not include the detailed work that is sometimes necessary to fully understand and predict complex coastal systems like the East Devon coast. Also, since the work was done on the SMP, there have been technological advances that enable much more accurate mapping of the coastal change that is actually happening. Plymouth University believe that these advances, coupled with factoring in the latest expectations of climate change, will result in a more accurate plan of the areas likely to be at risk from coastal change.

## **Who has produced the new coastal change maps?**

The Coastal Processes Research Group in the School of Biological and Marine Sciences, University of Plymouth have undertaken the work in association with the Environment Agency, Natural England, the Marine Management Organisation and the local authorities of East Devon, North Devon and Torridge.

## **Have coastal change maps been produced for the whole of East Devon?**

No, at the moment we only have new maps for the area from the east of the River Sid (Sidmouth) to the Dorset boundary at Lyme Regis. This has been used as a pilot study area by the University to pilot the new method for calculating cliff retreat, coastal change and coastal flooding.

## **How have the new coastal change maps been produced?**

The University of Plymouth have devised a method for predicting coastal change related to the type of coast involved (estuary, cliff or beach). This is a complex process. For example, to estimate future cliff line positions, past retreat rates are combined with predicted future sea level rise using scientific formulae. For estuaries predicted sea level rises are combined with existing flood mapping from the Environment Agency. If you want to read the papers produced by Plymouth University giving details of the methods developed they are available at [South West Partnership for Environment & Economic Prosperity \(SWEEP\) - Plymouth Marine Laboratory](#). We have also produced a briefing note to guide consideration of the issues by our Strategic Planning Committee and this is available at [Agenda for Strategic Planning Committee on Tuesday, 20th October, 2020, 2.00 pm - East Devon](#).

## **How likely is it that the changes shown will happen?**

Plymouth University have estimated coastal change over the next 100 years using the most update information, but coastal change is a dynamic natural process so there is no guarantee that the changes will happen as predicted or that other areas won't be affected over the next 100 years. Also, we have plans in place (through the Seaton and Sidmouth Beach Management Plans) for coastal protection works that are designed to reduce the rate of cliff erosion. It is important to note that the University work takes no account of these proposed coastal defence works

## **How has the additional work been funded?**

The research work has been funded by the South West Partnership for Environment and Economic Prosperity (SWEEP), which is a partnership project with the aim of delivering economic and community benefits to the South West, whilst protecting and enhancing the area's natural resources.

## **Where are the places most at risk of coast change?**

Generally the new maps show more variation than the Shoreline Management Plan in the extent of areas potentially affected by coastal change. This means that some areas that are not shown to be affected in the SMP are now included in the area at risk and some of the areas shown to be at risk in the SMP are not included in the new mapping. It is important to note that the new maps for cliff erosion include a ten metre 'buffer' inland of the predicted coastal change and all references to places refer to the land within this buffer.

Areas that are predicted to experience less erosion than the SMP maps include:

- The section of coast from Seaton to Lyme Regis.

- Much of the coast west of Highcliffe close in Seaton, through Beer to the east of Branscombe mouth; and
- The majority of the coast from Branscombe mouth to the cliffs east of Sidmouth (roughly south of ‘Southdown’).

Areas where more erosion is predicted in the new maps compared to the SMP are:

- In Seaton including some properties accessed off Beer Road and the Highcliffs Close area;
- Two small areas either side of Branscombe mouth; and
- Land in Sidmouth east of the River Sid including properties accessed off Cliff Road, Beatlands Road, Southway, Laskeys Lane and Alma Road.

#### **How will the new information be used?**

The main purpose of the Plymouth University work is to develop a robust method for identifying areas at risk of coastal change that can be used by councils nationwide. The case study of East Devon, as part of that project, is evidence that could be used to inform the policies of the new local plan, and could help to deliver coastal protection schemes. The main purpose of planning for coastal change is to identify the places most likely to be affected and to develop policies to reduce future risks to people and property and to help communities at risk prepare and plan for future risks.