

Rising sea levels and increased storms pose threat to coastal communities

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The rate of coastal erosion around the UK is expected to increase substantially in the future, according to a new study by the University of Plymouth.

The report, prepared for the Marine Climate Change Impacts Partnership (MCCIP), highlights that 17% of coastlines in the UK and 19.9% in Ireland are being affected by a range of issues including sea-level rises and the increased frequency and intensity of extreme storms.

England and Wales are the worst affected UK regions, with 28% of their 3700km of coast experiencing erosion greater than 10 cm per year, while more than three-quarters of Scotland's coast is unlikely to erode at perceptible rates.

The report was written by world-leading researchers from the University of Plymouth, Scottish Natural Heritage, Birkbeck, University of London and the University of Cambridge.

As well as reference to studies by scientists in Plymouth, it includes forecasts based on the Met Office's UK Climate Projections 2018 (UKCP18) report which suggests sea levels could increase by as much as 80cm by 2100 with wave height rises of up to 20%, particularly in the south-west of the UK and Ireland.

However, it emphasizes that while [climate](#) change and [sea-level rise](#) are both gradual and global events, [coastal erosion](#) and flooding are highly episodic and short-term processes and normally very localized in terms of impact.

As such, it says coastal management strategies need to take into account not only future predictions around climate change but also a wide variety of adaptation strategies, including beach nourishment and managed retreat.

The study is one of 26 individual, peer-reviewed scientific reports which form part of the MCCIP Report Card 2020, which summarizes detailed evidence of observed and projected climate change impacts and

identifies emerging issues and knowledge gaps.

Gerd Masselink, Professor of Coastal Geomorphology at the University of Plymouth, said:

"This report emphasizes the vulnerability of our coastlines to climate change, and gives a flavor of what might be to come in the future. Our studies over recent years have shown that following the 2013/14 winter storms beaches across the South West of England took a long time to recover. That obviously has a major impact on the coastal communities which rely on them as part of their defense from the oceans, and such examples are now becoming evident all around the UK. As a society, we need to adapt to the effects of climate change and recognize we need to take action now to mitigate future sea-level rises and increased storminess."

Paul Russell, Professor of Coastal Dynamics at the University, added:

"According to Met Office predictions, coastal flood risk in the UK is expected to increase over the 21st century and beyond. Around one-fifth of the coastline is already being affected by erosion, but the scale of impacts at individual locations is strongly determined by site-specific factors. In Scotland, for the first time since the last glaciation, sea-level rise is outpacing vertical land movement caused by post-glacial crustal 'rebound,' increasing coastal erosion rates. This could mean that for the first time, all of Scotland's firths will be exposed to increased erosion rates due to relative [sea-level](#) rise."

The MCCIP Report Card 2020 highlights the current and future impacts of [climate change](#) on UK seas, dependent industries and society, and features contributions from more than 150 scientists at over 50 leading research organizations.

It shows that climate impacts for UK coasts and seas are varied and far-reaching, confirming findings reported at a global level by the Intergovernmental Panel on Climate Change (IPCC) in their "Ocean and Cryosphere in a Changing Climate" report last year.

This information is crucial to not only help develop adaptation measures and management actions to support vulnerable marine life and habitats, but also to help UK industries and wider society prepare for and adapt to these far-reaching marine climate impacts.

Provided by University of Plymouth

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