

# COASTAL FLOODING AND MANAGEMENT

Coastal erosion and the threat of flooding will only increase as sea levels rise over time. As our shores and landscapes change naturally without intervention, more water will reach further inland putting more homes and communities at risk of flooding.

## The main causes of flooding are:

**Storm Surges:** These are changes in sea level due to high winds and low pressure conditions.

**Rising Sea Levels:** This gives a higher starting point for the storm surges and larger waves that can overtop the coastal defences putting more people at risk of coastal flooding.

**Reclaimed land:** Reclaimed land can be susceptible to flooding as it is low lying and flat.

## Coastal Flooding and Erosion Management Methods

Coastal erosion is the loss of coastal land through the removal of sediment and bedrock at the shoreline. There are four main erosion processes, known as attrition, hydraulic action, abrasion and corrosion. The various techniques and options below are used to slow down the effects.

### Hard Engineering

These methods involve using man-made structures to protect the shoreline against flooding and erosion.

#### Breakwaters



Douglas breakwater  
cc-by-sa/2.0 - © Andrew Abbott - geograph.org.uk/p/5160449

#### Gabion Baskets



Gabions, Solent Beach  
cc-by-sa/2.0 - © Mike Faherty - geograph.org.uk/p/1040956

#### Groynes



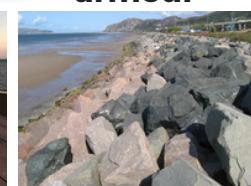
Dovercourt groynes  
cc-by-sa/2.0 - © Bob Jones - geograph.org.uk/p/748822

#### Revetments



Image: The Flood Hub People

#### Rock/concrete armour



Rock armour  
cc-by-sa/2.0 - © Jonathan Wilkins - geograph.org.uk/p/1452136

#### Sea Walls



Sea wall - below Highcliffe Castle Golf Club  
cc-by-sa/2.0 - © Mr Iggyav - geograph.org.uk/p/782406

### Soft Engineering

These methods use natural processes to protect the shoreline against flooding and erosion.

#### Cliff stabilisation



South Coast cliffs  
cc-by-sa/2.0 - © Nigel Freeman - geograph.org.uk/p/581176

#### Managed realignment



Image: The Environment Agency  
Hesket Out Marsh West in the Ribble Estuary during the construction phase

#### Dune regeneration



Image: The Flood Hub People

#### Beach Nourishment



The Beach at Cley, Norfolk  
cc-by-sa/2.0 - © Peter Home - geograph.org.uk/p/24206

Last reviewed: January 2025

For more information visit:

[www.thefloodhub.co.uk](http://www.thefloodhub.co.uk)

This resource has been produced by Newground