# **Vulnerability**

## **09**

## Natural hazards and industrial risks









### Reference points

SEVESO Establishments by departments (2011)

Nord: 28

Pas-de-Calais: 17

Seine-Maritime: 38

Manche: 2

Côtes d'Armor: 5

Finistère: 6 Ile-et-Vilaine: 7 Morbihan: 4 COMAH Establishments by coastal counties and UA (2011)

Dorset: 1
East Sussex: 1
Guernsey: 1

Hamsphire: 1
Jersey: 1
Kent: 5

City of Plymouth: 3 City of Southampton: 7

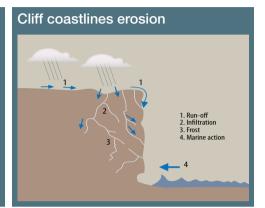
West Sussex: 1

#### What is marine submersion?

Temporary flooding by the sea of a coastal area under severe weather and tide conditions caused by storm waves.

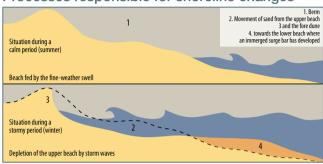
The flooding covers land below highest sea level, and may even breach sea defences. It is caused by the break-up or destruction of the dune ridges (already subject to intense erosion), or by a dike being weached or destroyed.

Definition taken from the Coastal Risk Prevention Plan La Documentation française, 1997.



### Netherlands Gloucestershire **United Kingdom** South Gloucestershire Bath & NF Somerse Southampton Hampshire Portsmouth Brighton and Hove (43) (31) (0-1 m below the level of centennial tide Area subject to coastal erosion Number of high-threshold SEVESO and COMAH sites Calvado Active nuclear power station Nuclear fuel reprocessing plan Ille-et-Vilaine Sensitive area at sea Number of accidents, pollution and shipwrecks occurring in sensitive maritime areas over the last 50 years. Sources: Evaluation préliminaire des risques d'inondation (EDDI) Submersions marine nersion marine, DREAL Bretagne, Haute-Norn ent Agency. Inspection der installation also Atlantic Ocean

#### Processes responsible for shoreline changes



The Channel is a vulnerable environment. A wide range of activities take place ground the Channel on a daily basis. Each can have a varying spatial impact in terms of scale and timeframe

To those that are man-made should be added those resulting from natural forces such as the wind, rainfall and tidal swell.

When all of these different elements are taken together, it is possible to draw up a map of environmentally sensitive areas which may it turn demand attention. There are many establishments across the Channel region which manufacture, store or use hazardous substances posing potential risks for both the population and natural environments. 115 have been regsitered in the French coastal départements and 21 in the English coastal counties of the Channel. Their distribution is particularly concentrated in the Nord-Pas-de-Calais, Seine-Maritime and Hampshire areas as well as near the major ports of Le Havre. Dunkirk and Southampton.

These sites – classified SEVESO in France and COMAH (Control of Major Accident Hazards) in the UK – are closely regulated and contained but it is the increase of such establishments that arguably poses a risk for populations living near the sites themselves. For example, over 700,000 people live around the 49 such sites on the French side.

Natural disasters also place whole areas at risk. Tracts of land susceptible to flooding are to be found all along the coast on both sides of the Channel. When strong tides and heavy rainfall occur at the same time, these areas may experience severe floods. Parts of the south of England are particularly exposed to this type of risk, as are most of the French estuaries. Despite building defences many areas continue to be affected and the impact can be even greater on the English coast as it is more densely populated.

Another natural phenomenon heightens the vulnerability of some areas, namely coastal erosion. Strong winds and tidal swell impact on the coast, causing movement of materials, hollowing out cliffs and sand dunes as well as eroding major stretches of the coast over time. Thus weakened, such stretches of coastline may still find themselves being chosen as the location for some high risk activity.

Neither is the sea itself free from risk. Maritime transport is the source of different types of pollution. Seven areas are particularly hazardous for maritime traffic, and some 213 accidents have been recorded over the past half century. The entrances to the maritime traffic separation zones are particularly exposed to risk of accidents, as are the entrances to ports (Le Havre - Medway towards the Thames). The consequences can be very damaging for the marine environment – people, fauna and flora – as well as any economic activities present there.

Whether on land or sea, the Channel remains a vulnerable space where the sheer concentration of human activities has had to adapt to sometimes hostile natural conditions.