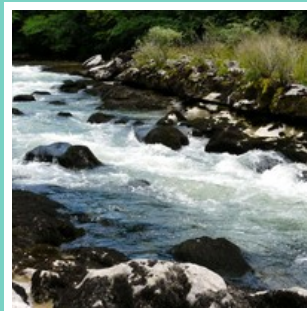


# Coasts and seas



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## Coasts and seas

Human activities are causing unprecedented environmental changes for coastal and marine ecosystems. Pressures from fishing, pollution from land- and sea-based sources, urbanisation, loss and degradation of valuable habitat, and invasions of non-native species are growing worldwide. All these impacts are likely to be exacerbated by the changing climate.

Europe is surrounded by four sea regions: the Mediterranean, Black and Baltic Seas, and the North Atlantic Ocean which also includes the North Sea. Europe also conducts many maritime activities in the Arctic.

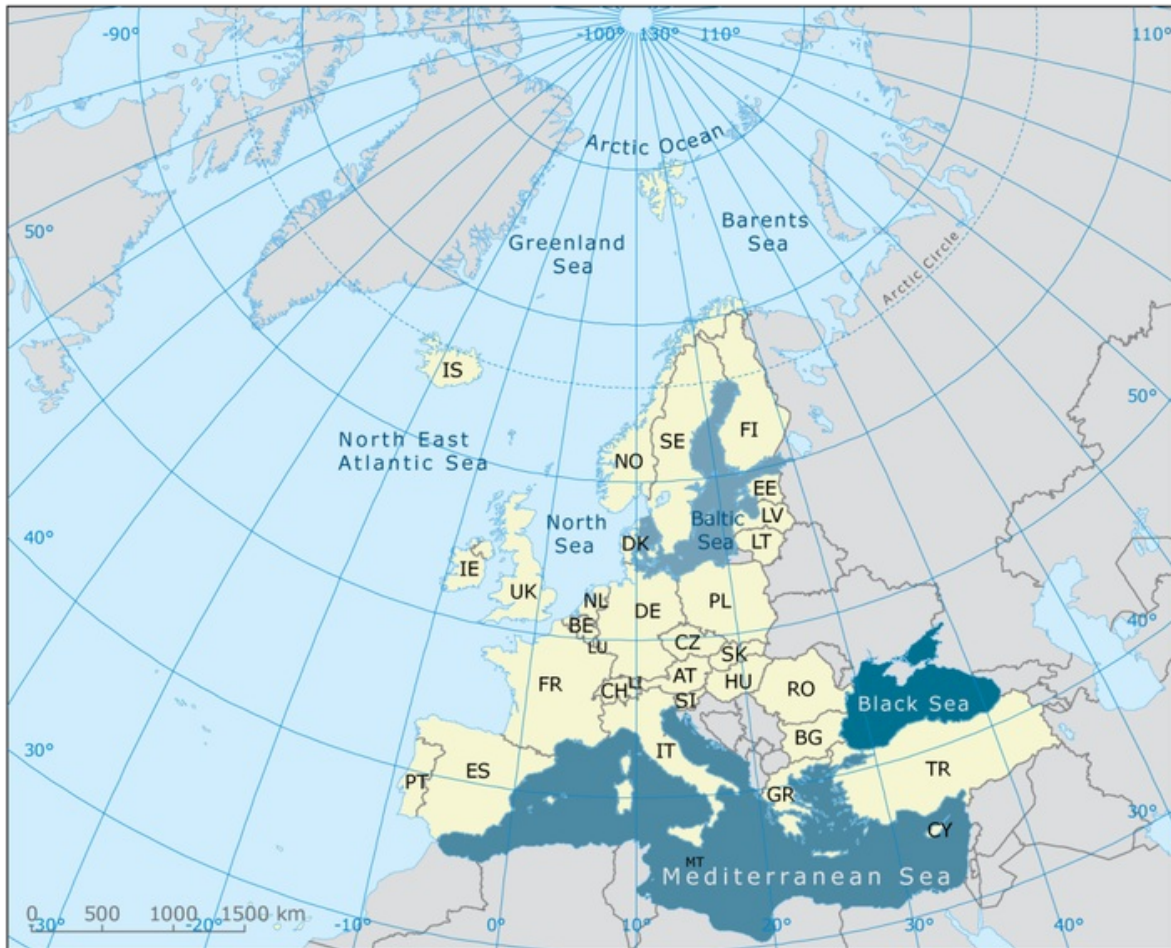
Human activities are often concentrated in coastal regions least able to assimilate these activities and where adverse effects are most apparent. The main threats to European coastal areas are water pollution and eutrophication, loss of biological diversity, urban development, landscape deterioration and coastal erosion.

## Europe's seas and coasts: interesting facts

- The maritime area under the jurisdiction of EU Member States is larger than the total land area of the EU
- The EU has a coastline of 68 000 km – more than 3 times longer than that of the United States and almost twice that of Russia; with EEA member countries Iceland, Norway and Turkey included, it is 185 000 km
- Almost half of the EU's population lives less than 50 km from the sea; the majority is concentrated in urban areas along the coast. In 2001, 70 million people or 14 % of the entire EU population lived within 500 metres of the coast.
- The sea is Europe's most popular holiday destination: 63% European holidaymakers choose the seaside as their holiday destination. For example, an estimated 8 million to 10 million anglers fish for sport or pleasure, supporting an European industry of between EUR 8 billion and 10 billion per year
- Economic assets within 500 metres of the sea have an estimated value of EUR 500 billion to 1000 billion
- EU public expenditure on coastline protection from the risk of erosion and flooding is expected to reach EUR 5.4 billion per year for the 1990 to 2020 period.

[EC, 2006:  Maritime Facts and Figures (accessed 27 September 2010)]

## About coasts and seas



### Regional sea characteristics

Europe's seas include the Baltic, Black, North-East Atlantic and Mediterranean seas. The North-East Atlantic includes the North Sea, but also the Arctic, Barents, Irish and Celtic Seas, the Bay of Biscay and Iberian Coast.

The **Baltic Sea** is semi-enclosed with low salinity due to restricted water exchange with the North-East Atlantic and large river run-off. These conditions make the sea particularly vulnerable to nutrient pollution.

The **Black Sea** is also semi-enclosed; it is the world's largest inland basin with restricted water exchange with the Mediterranean. Its waters are anoxic at depths below 150 metres to 200 metres. Surface water salinities of the Black Sea are within an intermediate range. Most of the Black Sea is believed to host oil and gas reserves, and oil and gas exploration is under way.

The **Mediterranean Sea** is also a semi-enclosed sea with high salinity due to high evaporation rates and low river run-off. It has restricted water exchange with the Atlantic and Black seas. It is the most biologically diverse sea in Europe.

The **North-East Atlantic** covers a range of seas and a large climatic gradient. It is a highly productive area that hosts the most valuable fishing areas of Europe and many unique habitats and ecosystems. It is also home to Europe's largest oil and gas reserves.

The **coast** is the area defined by the coming together of the land and the sea. In the 24 EEA coastal countries, there are 560.000 km<sup>2</sup> of coastal zones, corresponding to 13% of the total land mass of these countries based on Corine Land Cover data from 2000.

The **deep sea** and **sea floor** forms an extensive and complex system which is linked to the rest of the planet in exchanges of matter, energy and biodiversity. The functioning of deep-sea ecosystems is crucial to global biogeochemical cycles upon which much terrestrial life, and human civilisation, depend. It is found both in European and international waters of the Atlantic and in the Arctic Ocean. The deep sea is usually considered to be that found at depths greater than 400 metres.

Degradation of marine and coastal ecosystems is observed in the Baltic, Black, Mediterranean and North-East Atlantic seas, and in the Arctic. Activities affecting the environment are a consequence of meeting our immediate human needs, but impact species and habitats that have evolved over thousands if not millions of years - sometimes irreversibly.

These activities are related to high and increasing population densities along Europe's coasts, fishing, agricultural pollution, industrial chemicals, tourist development, shipping, renewable energy infrastructures and other maritime activities.

Specific problems:

- Despite greatly improved waste-water treatment, diffuse nutrient pollution stemming from agriculture remains a major problem in the coastal and marine environment; it accelerates the growth of phytoplankton and can lead to wide spread oxygen depletion.

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- Concentrations of some heavy metals and persistent organic contaminants in marine biota, exceed food stuff limits at selected locations in all Europe's seas. Major accidental oil spills have decreased, but oil discharges from regular activities, such as transport and refineries, are still significant. These substances accumulate in the food chain.
  - Invasive species are spread through shipping and aquaculture, and can have devastating consequences for ecosystems and society. The annual economic loss due to aquatic invasive species is estimated to exceed USD 100 billion globally.
  - Unsustainable fishing occurs in all Europe's seas, posing a threat to the viability of European fish stocks. Destructive fishing practices – such as bottom trawling - continue. Fish, birds, mammals and turtles are by-catch, and marine habitats and ecosystems suffer from gear impacts. Fishing may alter the marine ecosystem.
  - Also protection of marine and coastal habitats and species through designation of coastal and marine sites as part of Natura 2000 is improving, it has been slow and difficult. The status of some coastal and most marine habitats remain un-assessed; 22% of marine mammals are threatened with extinction.
  - Tourism, responsible for urban development along the Mediterranean coast, is now becoming a driver of development on the Black Sea coast too.
  - Climate change is causing sea surface temperatures and sea levels to rise. Marine and coastal species are shifting their geographical and seasonal distributions in response to these changes; management of fisheries and natural habitats will increasingly have to adapt to these changes to ensure environmental sustainability. Ocean pH will continue to decrease in response to increasing CO<sub>2</sub> concentrations in the atmosphere; coral reefs in Europe's overseas territories, centres of biodiversity, are threatened by both increasing temperatures and acidification.

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## European Policies

Solving environmental problems of Europe's coasts and seas requires a policy response that operates across policy domains related to water, nature, pollution, fisheries, climate change and spatial planning. Historically these have been considered separate policy domains, but with the adoption of the **Marine Strategy Framework Directive (MSFD)** in 2008, an integrated response is being pursued; the management approach considers the entire ecosystem and sets the objective of achieving good environmental status for many specific environmental aspects. The MSFD is supported by the **Water Framework Directive (WFD)** which regulates ecological status in coastal and transitional waters by considering nutrient, chemical and hydromorphological pressure and by the **Habitats and Birds directives** that set conservation objectives for some marine and coastal habitats and species.

Growth of the maritime, agriculture and tourism sectors is expected to continue; an important future objective for the MSFD will be to ensure that this growth is environmentally sustainable, via management strategies. Such strategies can be supported through the implementation of planning principles in line with **Integrated Coastal Zone Management (ICZM)** and **Maritime Spatial Planning (MSP)**.

Although the MSFD sets an environmental objective for the status of fish stocks all aspects of fisheries are regulated by the **common fisheries policy (CFP)**. A new reform will be adopted in 2012.



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## Related Links

- MSFD requires good environmental status for many biological elements, including fish to be achieved in marine waters by 2020. It is expected to reduce loads and impacts of pollution in the marine environment.
- ICZM recommends the development strategies to achieve sustainable coastal development.
- MSP is a tool that supports development of strategies for sustainable sea use by bringing together multiple users of the sea.
- WFD requires the achievement of good ecological status or good ecological potential of biological and chemical elements in estuaries and coasts across the EU by 2015, and it is expected to reduce loads and impacts of pollution to estuaries and coasts. It will also reduce pressures from hydromorphological changes.
- Nitrates Directive aimed at reducing nitrate pollution from agricultural land;
- Urban Waste Water Treatment Directive aimed at reducing pollution from sewage treatment works and certain industries;
- The EU Habitats and Birds directives (see EU nature legislation) form the cornerstone of Europe's nature conservation policy. The Habitats Directive is built around two pillars: the Natura 2000 network of protected sites and the strict system of species protection.
- The threat of **climate change** is being addressed globally by the United Nations Framework Convention on Climate Change (UNFCCC). Its Kyoto Protocol sets binding emission targets for those developed countries that have ratified it, such as the EU Member States. Read more about climate change policies.

Published on 18 Jun 2008