

The North Sea

Where is it?

Location: Atlantic Ocean

The North Sea is a shallow, north-eastern arm of the Atlantic Ocean, located between the British Isles and Ireland and the mainland of north-western Europe.

It becomes the English Channel in the south-west beyond the Straits of Dover. It is connected to the Atlantic by the Strait of Dover and the English Channel and opens directly onto the ocean between the Orkney and Shetland islands and between the Shetland Islands and Norway. The Skagerrak, an eastward extension of the North Sea between Norway and Denmark, connects the North and Baltic seas via the Kattegat and the Danish straits.

How big and deep it is?

> 970 km long (600 miles)

560 km wide (350 miles)

With an area of around 570,000 km² (222,000 square miles)

Average depth is about 100 m (325 ft)

Maximum depth of 700 m (2300 ft)

This places the North Sea at the 13th largest sea on the planet

What is the weather like?

The area is under Maritime Temperate climates or Oceanic climates influence. These climates are dominated all year round by the polar front, leading to changeable and often overcast weather. Summers are cool due to cloud cover, but winters are milder than other climates in similar latitudes. Average air temperatures vary in January from 32 to 40 °F (0 to 4 °C) and in July from 55 to 64 °F (13 to 18 °C). Winters are stormy and strong winds are common. Tidal ranges average between 13 and 20 feet (4 and 6 meters) along the coasts of Britain and in the southern estuaries, while the range to the north and east is less than 10 feet (3 meters).

Did you know?

Historically, flamingos, pelicans, and great auks could have been inhabitants along the southern shores of the North Sea.

Massive exploitation of the Great Auk, through the collection of its eggs, drastically reduced the population.

The Gray whale used to be a common resident in the North Sea. Overfishing was the cause of its extinction in the Atlantic in the 1600s.

The Sperm Whale is the largest species of toothed whale, with adult bulls (males) growing to be about 15-18 meters (50-60ft) long and weighing about 45-70 tones.

Biomes

are the world's major communities, sorted according to their main vegetation and characterized by adaptations of creatures to that particular environment - Aquatic, Grasslands, Deserts, Forests and Tundra.

Which biomes does the North Sea belong to?

The North Sea falls into three biomes: Temperate deciduous forest, Tundra and Taiga.



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Geirangerfjord

Who lives there?

Seven countries have a coastline on the North Sea: Norway, Great Britain, Denmark, Germany, the Netherlands, Belgium and France.



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What lives there?

The North Sea is a home to about 230 species of fish. Cod, haddock, whiting, saithe, plaice, sole, mackerel, herring, pouting, sprat, and sand eel are the main target of commercial fishing.

Crustaceans - Norway lobster, deep-water prawns, and brown shrimp are also commonly found throughout the sea and are all commercially fished. Other species of lobster, shrimp, oyster, mussels and clams are also found.

Populations of Northern fulmars, Black-legged Kittiwakes, Atlantic puffins, razorbills, and a variety of species of petrels, gannets, seaducks, loons (divers), cormorants, gulls, auks, and terns, are also the main inhabitants of the North Sea coasts.

The North Sea is also a home to a variety of marine mammals. Common seal and grey seal are common residents along the coasts. The very northern North Sea islands like the Shetlands are occasionally home to a larger variety of pinnipeds: bearded, harp, hooded and ringed seals, walrus as well.



Northern gannet

© Wikimedia Commons / Michael Hafekamp



Great Auk

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The North Sea cetaceans include harbour porpoises, common dolphins, bottlenose dolphins, Risso's dolphins, long-finned pilot whales and white-beaked dolphins, minke whales, killer whales, and sperm whales.



Risso's dolphin

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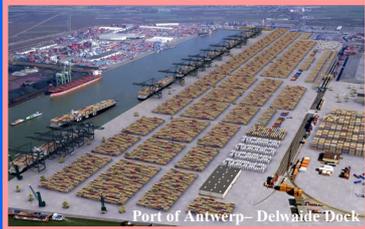
The constant mixing of waters in the shallow sea basin provide a rich supply of nutrient salts upon which the lower forms of marine organisms (the basis of the sea's food chain i.e. plankton) depends on. Phytoplankton and zooplankton are a varied and rich food supply for commercially valuable fish. Copepods which belong to zooplankton are a crucial element of the North Sea food chain by being often the basic source of food for many species of fish, birds and whales.

Threats to the North Sea!



Human activities

The main threats to the North Sea marine life are : the introduction of non-indigenous species (introduced species), industrial and agricultural pollution, overfishing and trawling, dredging, human-induced eutrophication, construction on coastal breeding and feeding grounds, sand and gravel extraction, offshore construction, and heavy shipping traffic.



Trade and transportation

The North Sea is one of the busiest shipping areas in the world. Merchant and fishing vessels operate within the North Sea area only and transit traffic as well; exploration-offshore oil and gas platforms - have severe effects on fisheries and other marine life. The Europort complex at Rotterdam (Netherlands) is one of the world's leading ports in cargo tonnage handled, and Antwerp (Belgium) and Hamburg are also among the largest. Other major North Sea ports include London, Dunkirk (France), and Bremerhaven and Wilhelmshaven.

Pollution

Ship accidents as well as land-based pollution, including the dumping of sewage and industrial wastes (particularly in the southern part of the North Sea) are the main sources of contamination. Over the years, the coastal countries of the North Sea have concluded international agreements designed to minimise dumping of hazardous wastes at sea, the discharge from land of certain toxic materials, and the incineration of wastes at sea. However, enforcement powers are limited, and pollution remains a critical issue in certain parts of the sea.

Climate change

Marine air and sea surface temperatures have been rising at a similar rate to land air temperature, but with strong regional variations. Since the 1980s the rate of rise has been about 0.2–0.6 °C per decade. Climate change models indicate that temperatures will continue to rise in all waters around the UK coast, with stronger warming in the south-east (~0.15–0.4 °C per decade in the southern North Sea) than the north-west.

Overfishing

Dramatic declines have been noticed in many populations of fish. Right whales, sturgeon, shad, rays, skates and salmon among other species were common in the North Sea into the 20th Century. Numbers declined due to overfishing. The major fishing countries within the North Sea area are Norway, Denmark, the United Kingdom, and The Netherlands. A unique fisheries arrangement called the **Common Fisheries Policy** was adopted by members of the European Community in 1983 to prevent overfishing process. A review of the Common Fisheries Policy in 1992 resulted in the establishment of a stricter monitoring program, including observers aboard fishing vessels. Additional reforms of the policy were adopted in 2002 (implemented 2003) to ensure the ecological and economic sustainability of the fishing industry.



The North Sea cod are managed through a multi-annual plan aiming at the recovery of cod stocks, which started in 2003. Currently, the plan is being reviewed by the European Commission and stakeholders with a view to agree on a new plan by 2009. Scientists from the International Council for the Exploitation of the Sea (ICES) have announced that cod stocks continue to be chronically overfished in almost all European waters and recommended **zero catches** i.e. we stop fishing for cod!

Thousands of marine species are transported, either intentionally or accidentally, from their native range to "new" areas.

These species are called non-native species and sometimes referred to as Alien or Invasive species.

Introductions and transfer of non-native marine species to their non-native environment mainly occurs by the transport and discharge of ballast water, and to a lesser extent by transport of fouling organisms on hulls or through aquaculture. 26 introduced macrozoobenthic species were identified at the German North Sea coastal area only! The main origin of these invaders is the Atlantic coast of North America.



Marine Protected Areas

The coasts of the North Sea are home to many nature reserves including the Ythan Estuary, Fowlsheugh Nature Preserve, and Farne Islands in the UK and the Wadden Sea National Parks in Germany.

These locations provide breeding habitats for dozens of bird species. Tens of millions of birds make use of the North Sea for breeding, feeding, or migratory stopovers every year.



Do you know what OSPAR is?

OSPAR is the Convention for the Protection of the Marine Environment of the North-East Atlantic created in 1992. This convention came into play as the border countries of the North Sea wanted to address threats to the North Sea. The name OSPAR comes from combining Oslo and Paris (two other Conventions on the North Sea). It is managed by the OSPAR commission and has taken action to counteract the harmful effects of human activity on wildlife in the North Sea and to preserve many endangered species.