Threats to the ocean Fact File

Why do we need to protect the ocean?

The ocean covers over 70% of the planet and is home to some of the most colourful, fascinating and beautiful life in the world. The ocean is a vital support system for our planet, playing a major role in the water cycle, providing oxygen, storing carbon, regulating our climate and providing food for millions.

Human activity has been threatening the health of our ocean for centuries and harming the ocean's ability to support us. One third of the world's population live by the coast, putting enormous pressure on coastal ecosystems. Fragile habitats have been destroyed, once-common species are now endangered, and marine resources have been exhausted.

A healthy reef
© NOAA

Fishing litter
© Bo Eide

Our seas are under threat all around the world, with marine ecosystems some of the most heavily-exploited ecosystems on the planet. Perhaps because the ocean is so vast, we underestimate how our actions can impact it.

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Threats to our ocean

Marine litter

80% of marine litter comes from sources on land, and our throwaway society is having a harmful effect on marine life.

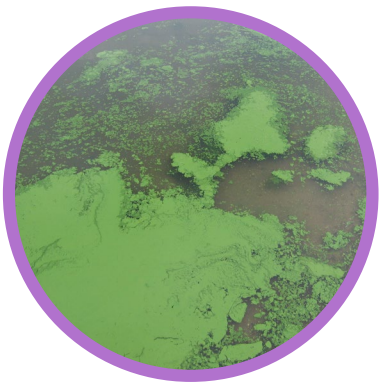
- 60-90% of marine litter is made of plastic items, which can take hundreds of years to break up.
- Animals can become entangled in litter, causing injury, reduced mobility and even death. Ingestion of litter, particularly plastic, is very problematic for marine life who are unable to digest it.
- Consumers and businesses are beginning to change their behaviour to reduce the threat of plastic pollution, but we are still a long way off where we need to be.

Gull with plastic packet
© Ingrid Taylar

Chemical pollution

There are many forms of invisible pollutants causing harm to the ocean.

- Sewage enters the ocean either treated from water treatment plants or untreated from drains.
- Harmful chemicals from factories, industries and even household products are discharged into rivers, finding their way eventually to the ocean.
- Agriculture runoff entering the ocean contains pesticides and other chemicals which can cause algal blooms, reducing oxygen and harming marine life. These toxic chemicals can build up in food chains causing harm to a wide variety of marine life.
- Chemical pollutants can travel in ocean currents and have been found in areas of the ocean miles away from human activity.



Algal bloom
© Dr. Jennifer L. Graham

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Climate change

Human activities are producing high levels of CO_2 and other greenhouse gases, leading to a change in the earth's climate.

- Marine ecosystems are sensitive to even modest changes to their environment.
- Rising temperatures are causing coral reefs to bleach and die, and are causing species to change their natural migration routes.
- Increasing CO_2 levels are changing the chemistry of the ocean and leading to ocean acidification. This impacts species that have calcium carbonate skeletons, like mussels and lobsters.
- Rising sea levels and increased storms are damaging fragile coastal habitats.

Bleached coral
© ARC Centre of Excellence for Coral Reef Studies

Unsustainable fishing practices

Millions of people all over the world rely on seafood for income and food.

- Unsustainable fishing poses a huge threat to marine biodiversity, impacting food chains and causing depleting fish stocks. 90% of the world's fish stocks are fully or over-exploited.
- Destructive fishing practices like trawling and dredging can badly damage seabed habitats.
- Illegal and unregulated fishing has disastrous effects on the marine environment and harms the livelihood of honest fishers.
- Intensive fish farming causes pollution and depletion of wild caught fish stocks, through their use in fish feed and through farmed fish spreading disease and parasites to wild fish.

Bottom trawler
© ekkaia via Flickr

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Trafficking of marine life

Species like seahorses, sharks and eels are caught for their value in the traditional medicine market, as seaside souvenirs, and delicacies like shark fin soup.

- Every year, an estimated 150 million seahorses are caught for the souvenir and medicine trades. As a species, seahorses could be extinct by 2050.
- The critically-endangered European eel is at the centre of the largest wildlife crime in Europe, with the illegal trafficking of these fish to Asia becoming a multibillion-euro industry.

Seahorse
© Valkyrie Pierce

Oil and gas

Drilling for oil and gas can pose serious threats to the marine environment, from the construction of platforms, transporting of goods, building pipelines and extremely destructive oil spills.

Oil washing up on a beach after a spill © NOAA

Construction and dredging

In the ocean, construction takes place for the purpose of:

- oil and gas rigs, wind turbines, pipelines, coastal development or the extraction of marine sediments for construction on land.
- All of these activities can cause harm to the marine environment through direct destruction of habitats and noise pollution.

Offshore wind farm
© DECC (UK Gov)

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Recreation and tourism

60% of the world's population live within 60km of the coast, and many people use beaches and coastal waters for recreation.

- Pressure from recreational development and activities can cause harm to sensitive coastal habitats.
- Activities like pleasure boating can cause harm through oil discharge and damage seabed habitats when anchoring.
- Natural coastal habitats are being destroyed to make room for development. This not only directly reduces biodiversity, but also reduces vital functions these habitats provide, such as helping to protect land from erosion and helping to filter nutrient runoff from the land.

Falmouth, UK
© Tim Green

Shipping

Many of our commercial goods are transported around the world by our shipping industry.

- This industry is associated with causing large amounts of pollution through emissions, oil spills, container spills, dumping of rubbish at sea and chemical pollution through anti-fouling paint.
- Shipping also causes damage through anchoring, shipwrecks, noise pollution, direct contact with large marine mammals and the movement of invasive species in ballast water.

Container ship
© Steven Straiton

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Managing threats to the ocean

Managing activities in the marine environment is important to ensure we protect the future health of the ocean, but it is an incredibly difficult task.

There are many stakeholders who have conflicting opinions on marine management, including governments, commercial industries, large and small-scale fishers, tourist industries, environmental NGOs, the scientific community and coastal residents. The ocean is a vast space and managing activities within it is logistically and financially difficult.

Ecosystem Based Management (EBM)

EBM is an integrated approach to managing the ocean's resources. Rather than considering a single issue, species or ecosystem, this type of management seeks to protect the environment while continuing to support communities and the economy.

It's important that the various users of the sea understand how their interactions with the ocean affect its environment. By better understanding this connection, users can be better prepared to predict risk and work to eliminate harm to the ocean. EBM also focuses on assessing the cumulative impacts on the ocean. Users from various sectors need to work collaboratively with each other to increase knowledge and ensure sustainability of ocean resources.

Legislation, laws and licences

Legislation and laws are in place to reduce threatening activities. Many activities require licences, and marine industries such as dredging and construction have to pass several environmental criteria before being issued with a licence.

Oil rig

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Managing threats to the ocean (continued)

Marine Protected Areas (MPAs)

MPAs act like nature reserves, protecting specific vulnerable species or whole habitats due to their importance as breeding or feeding grounds. 'MPA' is a catch-all term and there are many different types in the UK, including Special Protected Areas (SPAs), Special Areas of Conservation (SACs), Marine Conservation Zones (MCZs) or RAMSARR sites.

MPAs can help to reduce destructive activity and protect and recover biodiversity, but in order for them to work effectively, a network of sites is needed across the UK as marine species are mobile. Many of the designations are merely names, and damaging activities still take place in some of these areas. MPAs need to be better managed and enforced, and we need to increase the number of Highly Protected Marine Areas or No Take Zones, where all damaging activities are banned.

Restoration

Restoration projects aim to actively restore habitats through conservation work, including initiatives such as Project Seagrass in Wales, and the EU LIFE ReMEDIES project in southern England. These projects aim to restore seagrass beds by collecting and cultivating seeds and actively planting them in coastal waters at suitable sites to restore seagrass beds in particular areas.

Inner Sound of Skye, the site of an MPA
© Reading Tom

Seagrass bed
© Benjamin L. Jones

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