



The open seas are the largest habitat on earth, covering over 70 per cent of the planet's surface. Home to a dazzling array of living things – from microscopic plankton and cold-water coral to huge fish and mammals – the open seas are the giant reservoir at the beginning and end of the water cycle which sustains all life on earth. They give us oxygen, rain and food. They buffer the weather and regulate global temperature, absorbing vast amounts of our pollutants. The open seas have always filled humanity with wonder and awe, but we have only recently begun to understand their importance. And with that understanding has grown the realisation that this extraordinary habitat is in deep trouble.



Plankton is thought to account for 90 per cent of life in the open seas. The word 'plankton' comes from a German word meaning 'drifters'. It refers to the fact that plankton drift rather than swim, getting around with the movement of ocean currents. Most plankton are microscopic. They are divided into two groups, phytoplankton (plants and bacteria) and zooplankton (animals).

Phytoplankton drift in surface waters, converting sunlight into food through photosynthesis. They are eaten by masses of tiny animals called zooplankton. Smaller zooplankton are in turn eaten by larger zooplankton such as jellyfish, and by fish, sea birds and whales. A green sea with low visibility usually indicates large

quantities of phytoplankton. When the sea is deep blue and we can see a long way underwater, phytoplankton is sparse.

In the Atlantic Ocean off the west coast of Ireland, cold-water corals exist. They are found along the edge of the continental shelf below the surface of the open water. Cold-water corals support high biodiversity, with over 1,300 species of invertebrates and fish recorded around them. The corals are long-lived and slow-growing, making them susceptible to damage from human activities such as bottom-trawling for fish. Mounds or reefs of coral formed over thousands of years are largely composed of the skeletons of hard coral.

Other species found in open water include mackerel, herring and other fish; mammals like whales, dolphins and porpoises; sharks, including the great basking shark; our native dogfish and turtles; and sea birds – such as the gannet – which feed on fish. Salmon and eel spend part of their lives in the oceans before returning to their native rivers. Seaweeds that have broken away from coastal areas or seaweeds that can grow on large whales also exist in the open sea. Exotic seeds can travel for thousands of miles from faraway islands to our shores ... even coconuts have been spotted on Irish beaches!

THREATS TO THE HABITAT

The seas were once thought to be plentiful, but we have since learned that they are not, and many species of fish are in decline through overfishing. There are too many fishing boats chasing too few fish, and trawlers are damaging our fragile cold-coral ecosystems.

Toxins from dumping our waste at sea get passed up the food chain of which we are also a part. Organic pollution causes an excessive growth of algae, which smothers marine life. Oil spills wreak havoc on the environment and marine mammals and sea birds.

An increase in carbon dioxide in our

atmosphere is altering the chemistry of the ocean. This causes acidification and threatens vulnerable ecosystems. Increases in the ocean's temperature due to global warming can affect the distribution of many marine species, leading to a loss of cold-water species and a rise in warm-water species. Global warming is also increasing storm activity and causing rising sea levels.

WHAT CAN INDIVIDUALS DO TO PROTECT THE HABITAT?

Reduce your carbon footprint by taking responsibility for the choices you make every day. Simple things like switching off lights, computers, TVs and appliances can make a significant difference. For information on reducing your carbon footprint, visit www.change.ie.

Eat less seafood, and only purchase seafood from sustainable sources (see www.ssc.org). Practice safe clean boating, being careful not to damage wildlife. By reducing your use of plastic bags – a very commonly found litter in the open seas – you will help save fish, as they tend to mistake plastic bags for jellyfish and can end up choking on them.

FURTHER INFORMATION

- Marine Institute: www.marine.ie
- Irish Wildlife Trust: www.iwt.ie
- Coastwatch Europe: www.coastwatch.org
- Irish Whale and Dolphin Group: www.iwdg.ie
- Sherkin Island Marine Station: www.sherkinmarine.ie
- Cold-water coral information: www.lophelia.org
- The Heritage Council: www.heritagecouncil.ie
- World Wide Fund for Nature: www.panda.org