



FACT SHEET

Marine Pollution

Factsheet No.30

The ocean: treasure trove...

The sea, which covers around 70 per cent of the earth's surface, is home to millions of fish, crustaceans, mammals, microorganisms, and plants.

It is a vital source of food for both animals and people. Thousands of birds rely on the sea for their daily food supplies. Fishermen throughout the world catch over 90 million tonnes of fish every year and in many developing countries fish is the principal source of protein.

People also depend on the sea for many of their medicines. Marine animals and plants contain many chemicals that can be used to cure human ailments. An estimated 500 sea species yield chemicals that could help treat cancer.

...or garbage dump?

The oceans are in a bad way. People have treated the sea as a dumping ground for thousands of years, offloading rubbish, sewage, and more recently, industrial waste.

Marine pollution frequently originates on land entering the sea via rivers and pipelines. This means that coastal waters are dirtier than the open seas, with estuaries and harbours being especially badly affected. Enclosed marine areas like the Aral Sea and semi-enclosed seas such as the Mediterranean are more polluted than open seas. Some pollution enters the marine environment from the air, when poisonous gases and aerosol particles drop into the sea. Additional pollution is actually created at sea by activities such as dredging, drilling for oil and minerals and shipping.

Pollutants

Toxins: Industrial processes such as paper or carpet manufacturing release harmful chemicals (chlorine compounds poisoning marine animals and plants are particularly dangerous often end up in the sea.) These toxic chemicals accumulate in food chains. When bigger fish eat smaller fish that are contaminated they too become poisoned. These fish may in turn be eaten by other fish or by mammals or birds and the poison gets passed on. Contamination becomes more concentrated as the toxins pass up the chain, making some animals infertile and more vulnerable to disease. In 1988, a virus killed 18,000 seals in the North Sea and northeast Atlantic. Scientific studies reveal that the seals were more susceptible to the virus because the seas had such high PCB



levels. PCBs (now banned in many countries) are chemical compounds used in the manufacturing process of, for example, electrical goods.

Pesticides: Agricultural pesticides seep through the soil and into rivers that wash them out to sea. Pesticides like Tributyltin (TBT), used to prevent boats, salmon cages and lobster pots from becoming encrusted with shellfish are highly toxic. In the 1970s, TBTs caused French oysters to develop deformed shells and become sterile.

Sewage and fertilizers: Nutrient enrichment or eutrophication occurs when untreated sewage and agricultural fertilizers get washed down rivers and out to sea. Raw sewage and fertilizers both contain nutrients such as nitrogen and phosphorus, which create massive explosions of toxic algae.

A few years ago a massive slick of poisonous algae spread through the channels, which separate the coasts of Sweden, Norway, and Denmark. The slime affected 200km of coastline, killed millions of fish and forced tourist beaches to close. If nitrogen and phosphorus continue to pour into the sea, algae will starve the seabed of oxygen and kill everything living there.

Algae-poisoned seafood is responsible for many human illnesses, including neurological disorders, cardio-vascular diseases, and gastro-intestinal problems. Paralytic shellfish poisoning, which suffocates victims, is currently on the increase, and there have been fatal out-breaks of poison-induced memory loss.

Untreated sewage is a particular health hazard for young children, causing stomach problems and respiratory disease, as well as ear, eye, and skin infections. Two-thirds of the sewage pumped into the Mediterranean and three-quarters of the sewage from Britain's coastal towns and cities is discharged raw, making both regions highly undesirable holiday destinations.

Oil: Every year over 3 million tones of oil pour into the sea. Much of this is produced by refineries, or by people thoughtlessly disposing of lubricating oils. The rest is discharged or spilt at sea. Although the media highlight disasters like the 1992 wreck of the Aegean Sea, less than one-third of the oil discharged at sea is split as a result of accidents. More than 1.1 million tones of oil are deliberately pumped out by oil tankers cleaning their tanks before taking on new cargoes. The worst oil pollution is therefore found on the main shipping lines where marine life, particularly plankton and larvae, is severely affected.

Even though shipwrecks spill relatively little oil, they can do great damage, smothering beaches and killing seabirds. The 1989 Exxon Valdez disaster killed some 300,000 birds off the coast of Alaska and inflicted serious long-term damage on the local environment.



Plastic: Plastic pollution is a growing problem. Fishermen discard about 150,000 tones of plastic net and line each year. Countless plastic containers and bands are tossed overboard from ships of all kinds. The plastic does not degrade easily and sea creatures eat it or get entangled. Plastic is thought to kill around a million seabirds and 100,000 whales, seals, and dolphins every year.

Dredged material: When harbours and waterways are dredged, the materials that have been cleared away are simply dumped into the sea. Each year dredges move over 200 million tones of material, which may contain high levels of harmful metals and chemicals. Dredging also creates sedimentation that can be very damaging. Coral reefs can die as sediment can block out light and smother them.

Solutions

Prevention is better than cure

If we want to have healthy seas we must create less pollution. It is much easier to keep the oceans clean by producing less pollution than it is to clean up after we have poisoned them.

Farmers, municipal authorities, industrialists, governments and the general public must all clean up their activities to reduce pollution.

The precautionary principle

Scientific knowledge is growing all the time but there is still much to learn. We may find out in a few years time that something we think is harmless now has actually been damaging the natural world all along. The Precautionary Principle enables governments to prevent releases of substances, even before we know for sure that they are harmful. This principle can play a vital part in keeping pollution out of the seas.

WWF

WWF's international Marine Pollution Preventions Program works to help everyone helping governments, businesses, and individuals understand why it is so important to keep the oceans clean and to come up with ways to do so.

WWF aims to conserve nature and ecological processes by :

- preserving genetic, species, and ecosystem diversity
- ensuring that the use of renewable natural resources is sustainable both now and in the longer term.
- promoting actions to reduce pollution and the wasteful exploitation and consumption of resources and energy.