

Sea pollution

Sea and the ocean pollution

The use of seawater and the exploitation of marine resources may cause serious damages unless they are carried out in a way that guarantees its sustainable use, i.e. that guarantees compatibility between the marine ecosystems and man's activities. Unfortunately, in many cases, since the antiquity the sea has been wrongly considered as a huge dumping ground in which all waste and dirt could be freely thrown. And it is still considered as such by poorly educated summer tourists, especially those who use sailing or motorboats and throw all their waste into it.

Today, the main causes of pollution in the seas and oceans can be:

- pollutants from human activities discharged into the rivers and carried to the sea (degradable and non-degradable organic materials from urban waste, organic products of agricultural origin, such as plant chemicals and fertilisers, pollutants from industrial waste)
oil spilled by oil tankers, following accidents or improper practices when cleaning tanks or discharging ballast water;
- radioactive substances: released during nuclear tests, by now stopped in all countries, and when producing atomic fuels;
- overheating of coastal waters, due to hot water coming from industrial cooling plants;
- excessive exploitation of fishing resources (too much fishing), that causes the fishing populations to decrease or even disappear;
- uncontrolled urban development along the coasts and uncontrolled and massive seaside tourism;
- discharge of nuclear and toxic waste;
- discharge of plastic containers and other non-biodegradable solid waste.

Heavy metal pollution

The most dangerous are: cadmium, lead, mercury that can be harmful to human health even in very low concentrations, as well as being highly toxic and non-degradable. They accumulate in those organisms that occupy the highest levels in the food pyramid: mercury pollution in the sea provokes the concentration of this metal in fish and the organisms that eat the fish, including men. Mercury that derives from the dumping of industrial waste and that reaches the sea is everlasting and continues its cycle by passing from one organism to another through the food chain.

Eutrophication of the sea

Oxygen, light and mineral substances are very important for the sea, as they allow organisms to develop. These nutrients melt into the water and their excessive presence makes the sea particularly rich in organisms. In fact the result is an intense growth of algae and aquatic plants that develop rapidly, altering the balance of the ecosystem. Herbivores that eat algae and plants are not enough and do not manage to control these vegetal populations, that form a large quantity of decomposing material as they die. The decomposition and fermentation of dead organisms means consumption of oxygen, which is less and less available in the environment for those organisms that need it to survive. As a consequence the number of organisms drastically drops.

This situation might occur in the Adriatic sea, where the Po river waters collect the agricultural, industrial and urban waste coming from the plain of the Po. These polluted waters are rich in nutrients and in the summer of 1989 a phenomenon of eutrophication occurred in the Adriatic sea, which was largely covered by a layer of mucilage produced by unusually growing algae.