

## POLLUTION

As the sea is so immense, it can seem like a useful bin for all the huge amount of waste produced by humankind, but this is woefully not true. The earth was once free of damaging chemicals and oil, plastic rubbish and other pollution. As humans have developed more and more industry over the last two hundred years, we are responsible for more and more damaging discharges and products.

As with rivers and lakes, the sea can seem a convenient place for businesses to get rid of their toxic waste materials. Bioaccumulation is a scary process whereby toxins pass up the food chain in ever-greater concentrations. A single shellfish on a rock beside a polluting factory may eat only a small amount of heavy metal. Then an otter eats 30 shellfish a day. A killer whale eats many otters. All the heavy metal in all the shellfish eaten by all those otters ends up inside the body of the whale! A female whale can pass these pollutants to their young in the milk. The tastiest fish have grown fat on the flesh of many smaller fish. We are the top of many a food chain, and so are at risk from accumulated toxins too.

### Pollution from the land

All rivers flow to the sea. Waste from human activities on land far away from the sea can travel to damage the marine environment. Pesticides and fertilisers added to farmland run off the land and down rivers, ending up in the sea. Oil enters the sea by running off roads. Eutrophication – **described on page 51** – can occur when sewage (human waste) or chemical fertilisers from soil enter the sea. If too many people use the beach as a toilet, the sea cannot cope with the additional waste; it becomes dirty. New traditions must emerge to suit the new situation.

### did you know?

- The world's oceans contain more than five trillion pieces of plastic pollution.
- Eight million tonnes of plastic are dumped in our oceans every year.
- The vast majority, 80% of this, comes from the land.
- The Mediterranean Sea between North Africa and Europe has 1,011 bits of plastic per acre - 3,000 tonnes of plastic floating in the Mediterranean Sea.



### Plastic in the Sea

Something is said to be biodegradable when it can be broken down into harmless products by the processes of nature. An unpainted wooden boat, or unprinted paper bag would be considered biodegradable. A biscuit wrapper, coloured with artificial dyes, and made of plastic, or fishing net made of nylon, is not. Rubbish can end up in the sea.

Plastic bags and other 'non-biodegradable' objects can get tangled in the feet of birds, or wrapped around the necks of sea creatures like seals. These animals die a miserable death. Wildlife at sea – birds, fish, turtles, dolphins, whales – often mistake plastic for food, their stomachs fill with plastic and they starve to death.

### Bycatch

Bycatch refers to the fish and other sea creatures which are caught by accident. Very often these creatures are simply thrown back into the sea dead or dying – another tragedy of fishing practices.

These may be species which are valuable, but not to the fisherman who has caught them.

### What a terrible waste of fish.

