

## Seriously Reads: CSI Whale

**Up to 600 whales, dolphins and porpoises become stranded on Britain's beaches and coastlines every year. Philip Hoare investigates why it happens and what the stranded animals' bodies can teach us...**

Having spent 15 years working - often intimately - on the subject of cetaceans, I welcomed an invitation to work on the documentary CSI Whale. 'Cetaceans' is the collective name for all whales, dolphins and porpoises who between them form a single group, known as an order.

To begin with, cetaceans can be divided into two categories; baleen whales, and toothed whales. Baleen plates are comb-like bristles that hang from the upper jaw of most large whales and allow them to filter-feed. When whales open their mouths, water and prey, such as krill or small fish upon which they feed, pour in. The water floods back out but the baleen filters out the prey for the whale to then swallow.

The vast majority of whales and dolphins, however, belong in the toothed category, and they feed on prey in a similar manner to most carnivores. These include the beaked whales, the dolphins and the porpoises. The sperm whale also sits here (the only large whale in this category) as do the beluga and narwhal.

These marine mammals are in fact highly social, sometimes forming superpods of 1,000 individuals or more.

When a whale is beached or stranded in shallow water, they suffer, in particular, because of its sheer size. Stranded whales suffocate, under the weight of their own bodies - in years gone by beached whales were then butchered by local residents and boiled down in cauldrons. Some animals die at sea and then wash up onshore, others come ashore alive, and some become trapped in shallow waters.

These days, we know a little more about why whales and dolphins strand. Up to 600 animals are found on UK coasts each year - the majority are smaller cetaceans, such as dolphins and porpoises. Mass strandings usually involve toothed whales (dolphins, porpoises, so-called 'blackfish', and sperm whales) which are inordinately social animals and will follow ailing comrades into shallow waters and even onto land.

Reasons cited include bad weather, which may disrupt their navigational abilities, and anomalies in the electromagnetic paths which cetaceans use, like birds, during migration. But modern strandings have been blamed on military sonar exercises, and the use of seismic surveys in oil exploration - the latter an ironic possibility, given that many cetacean species were exploited for their own oil.

Increasingly, blame is also laid on pollutants in the ocean. PCBs from pesticides, fire retardants, heavy metals such as lead, mercury and chromium, all enter cetacean bodies by virtue of their place at the top of the marine food chain. The accumulation of these toxins causes the animals' immune systems to become comprised. Sometimes, all these elements collide, drastically. Scientists have also discovered their stomachs to be filled with fishing gear, hooks, rope and plastic objects.

Yet these incidents at least give scientists vital data which may assist efforts to prevent such occurrences. As Rob Deaville notes, the apparent increase in strandings may be a result, paradoxically, of good news. In some species, whale numbers are recovering from the appalling culls of the 20th Century when the factory ships of Britain, Japan, Norway and Russia managed to kill an estimated three million animals. The public are also sensitised to these animals and their plight, and are more likely to report them, or want to help themselves.