**Domoic Acid**
In 2003, domoic acid caused the second-largest marine mammal die-off in U.S. history. Domoic acid is a naturally occurring toxin produced by blooms of microscopic phytoplankton. The toxin is concentrated in filter-feeding animals such as anchovies, sardines and shellfish, which are in turn eaten by marine mammals like dolphins, sea lions and manatees. As the toxin is absorbed into the body of these mammals, it inhibits the brain's neurochemical processes. Common effects of domoic acid seen in animals washed ashore include head weaving and seizures, which may lead to permanent brain damage and death.

In 2003, domoic acid was the cause of death of 685 sea lions and 98 dolphins in Southern California. Some experts from the California Dept. of Fish and Game believe the rise in domoic acid is due to an increase in run-off pollution into the ocean. Pollution may also have weakened the immune system of the sea mammals, causing them to become more susceptible to domoic acid poisoning.

**Protozoal encephalitis**
A significant percentage of mortality in sea otters is due to the one-celled organism, Toxoplasma gondii. Sea otters exposed to T. gondii can develop protozoal encephalitis, a deadly brain infection. An otter with this condition develops tremors in its front legs and loses muscle function, making it hard to groom and dive for food. Grooming is essential to a sea otter's survival. Sea otters have no blubber, so for insulation against freezing ocean waters, sea otters rely on their dense fur. An otter with protozoal encephalitis loses its defense against the cold water and has a significantly increased chance of dying.

**Pollution**
It is estimated that over 70,000 chemicals are currently in use as industrial compounds, pesticides, food additives and other purposes. This number is increasing by approximately 1,000 each year. Of particular concern to the health of marine mammal populations are the halogenated hydrocarbons (HHCs) such as the PCBs and DDT.

There are a number of possible effects these contaminants can have on marine mammals. These include infertility and reproductive failure, birth defects, cancer, behavioral change, immune and nervous system dysfunction, damage to kidneys, liver and other organs. High levels of pollutants such as DDT and PCBs have been found in the blubber of sea lions and whales.