Marine Biology Essay, Research Paper

Aquarium Assignment

A major source of coastal pollutants, human sewage fouls bays and beaches with both toxic and nontoxic pollutants. Although billions of dollars have been invested in sewage treatment plants to treat wastewater, new and growing coastal communities have increased the amount of discharge into oceans and estuaries. The United States Office of Technology Assessment has identified thirteen hundred major industries and six hundred municipal wastewater treatment plants that discharge into coastal waters of the United States.

Many toxic substances enter the sea through the sewer systems, but others originate as industrial discharges. For many toxic substances, we do not yet know how to determine their extent or fate in the marine environment or to evaluate their effects on marine life. Some of the better-known trace metals and toxic chemicals include mercury, copper, lead, and chlorinated hydrocarbons. Chlorinated hydrocarbons, synthetic chlorine-containing compounds, are created for use as pesticides or are by-products of the manufacture of plastics.

Oil is a very dangerous thing when it comes to oil spills into the ocean. These catastrophic oil spills engender a concern for the marine environment as no invisible containment can. Spilled oil floats on seawater and provides a constant reminder of its presence until it is washed ashore, sinks, or evaporates. Large volumes of oil suffocate benthic organisms by clogging their gills and filtering structures or fouling their digestive tracts. Marine birds and mammals suffer heavily as their feathers or fur become oil soaked and matter, and they lose insulation and buoyancy.

Until recently, marine debris was considered to be of minor importance when compared to other pollutants. Problems caused by marine debris, however may rival or exceed those resulting from some better known pollutants, including oil. By definition, marine debris is any manufactured object discarded in the marine environment. When dumped, it may sink to the sea floor, remain suspended at mid-depths, or float at the surface and eventually be carried ashore by winds and waves.

Plastics constitute as great an environmental threat as all the other kinds of debris, combined. Although plastics may break up into smaller pieces, they degrade much more slowly than most other kinds of debris, and most plastics float. Concentrations of plastics tend to be highest in the Northern Hemisphere, where vessel traffic is the heaviest, where most plastics manufacturers and fabricators are located, and where more intensive recreational use is made of beaches and coastal waters.

Hopefully, as we approach the twenty-first century, we can learn to leave some old and wasteful habits behind. It will not be easy or simple, but each one of us must develop a sense of stewardship toward the world ocean and its resources that is reflected in our personal as well as our political decisions.