Pollution In Ocean Environmets Essay, Research Paper

Pollution in Ocean Environments

The ocean is a fragile ecosystem that must have a element of constancy

to ensure that life can continue. The plants and the animals alike depend on

the ocean and it is being destroyed by toxins from human activities.

Pesticides like DDT are lethal to the animals in the ocean if given in large

enough amounts and in some areas there is enough DDT to do just that.

Sewage left untreated or improperly treated has the same effect as DDT. The

chemicals that come out of the sewage system in the right amount will kill the

plants and animals in the area. Industry is a vital part of the way we live, we

need electricity and all of the other goods industry provides. But industry

cause major environmental problems to the ocean. There are safe practices to

using pesticides that would reduce if not eliminate the problem. Also the

proper treatment of the sewage and industrial wastes would reduce the

amount of toxins released into the ocean.

Pesticides are a major problem to the environment, but they are also

very important to keep crop yields high. The pesticides reach the ocean

primarily through the tributaries of large rivers that eventually empty into the

ocean. The pesticides get into the rivers by runoff or wind deposition.

Pesticides have regulations that must be followed when spraying your crops

to ensure less runoff, but there was no such regulations in the past. Farmers

could spray their field with as much pesticide as they felt it required, so

obviously they sprayed on a lot. They did not relize that spraying more

pesticide than was necessary is less effective as spraying a proper amount.

This caused the ground water to become polluted with the pesticides and the

pesticides would ultimately end up in the river. When a heavy rainfall occurs

there is a lot of sediment erosion and water runoff. In this sediment and

water runoff pesticides are carried and get into the river systems. The chart

below shows the volume of pesticides used in the United States in different

activities in millions of pounds of active ingredients (Mellanby, 153).

Herbicides Insecticides Fungicides Other Total

Agriculture 525 225 51 60 861

Industrial 115 40 21 0.1 176.1

Home/Garden 30 35 12 0.1 75.1

Total 670 300 84 60.2 1112.2

That is in millions of pounds of the active ingredients only. That is a lot of

toxins being used in the United States and how much was properly stored,

applied and disposed of. Improper use occurs a lot, whether it is a spill or

aplying too much people do not properly use the chemicals and it ends up

hurting the environment. The pesticides that are used are made to be as

dilute as possible to prevent toxins escaping. The pesticides might need to

become stronger now because the pest have become resistant to the pesticide.

There are 428 arthropods, 36 weeds and at least 90 plant pathogens that are

resistant to pesticides (Mellanby, 125). If the pesticides do not effect the

pests then they are going to have to make new pesticides that will be stronger.

Sewage flows into coastal waters all over the world and in many places

it is left untreated. In Hartlepool, England 300 million gallons of untreated

sewage enters the sea every day (Raw Sewage, On-line). This causes a

problem because the sewage that is released untreated carries organic waste

and nutrients, and disease causing bacteria. Organic waste and nutrients

cause oxygen depletion in the water, this is called eutrophication. Nutrients

such as nitrogen and phosphorus provide algae and other aquatic plants with

perfect environment for growth. The plants then overpopulate the area and

when they die the decomposers take oxygen from the water causing fish to

die in excessive amounts because the environment is not suitable for life.

Also eutrophication cause the water have algae slime and other aquatic plant

to wash up on shore or float on top of the water and there by making bad

aesthetics. This causes many places that have relied on the water for tourism

and a source on income to go out of business. Disease causing bacteria

require the closing of beaches and shellfish beds. There has been many cases

of people getting viral hepatitis, cholera, typhoid fever and many stomach

and intestinal diseases from eating bad shellfish or swimming in areas with

high levels of bacteria. In 1993 beaches were temporarily closed over 2400

times in the Unites States because of high bacterial levels (Raw Sewage, On-

line). Many U.S. states monitor bacterial levels in the water and a few others

do not and there are many cases of sickness. The problem of unmonitored

bacterial levels is not as obvious in first world countries as in the third world

countries. There are many outbreaks of disease because of the

underdeveloped governments do not monitor the levels of bacteria.

Industry shapes the life of every person on this planet. The goods we

buy are from industry and about everything we owned is manufactured in one

way or another. These industries are vital but the vastness in which they

pollute is amazing. Acid rain is formed when acids such as sulfuric and

nitric acid react with water vapor in the air. Then when it precipitates this

acid falls to the ground or water. When the precipitate hits the ground it will

run into a body of water and if not directly then eventually in to the ocean.

The effect that acid rain has on the ocean is devastating it kills fish by

poisoning them. The direct discharge from factories release many types of

untreated toxins into the ocean. Some toxins that are released are PCB’s,

chloroform, arsenic, lead, and mercury. These toxins cause aquatic life

forms to die. Also in one case Beluga whales, which are 1/3 fat, absorb the

toxins into their fatty tissue and into there milk, which is fifty percent fat, and

passed to the calves (Beland, 46). This cause many deaths to young Beluga

whales and to other marine mammals. Fish also readily absorb mercury

which causes them to be unfit for human consumption. Power plants that use

water to boil and turn a turbine to produce electricity release this water after

it has been boiled with limited cooling and the hot water disrupts the marine

life around the outlet.

Proper application and choice of pesticides would reduce the amount

of pesticides that are released into the ocean greatly. There are regulations

that are made by the federal and the provincial government that regulates the

use of pesticides and sets out guidelines to follow when applying pesticides.

There is a new way of applying pesticides that is called Chemigation.

Chemigation is basically applying pesticides through an irrigation system.

Some advantages to Chemigation are uniform distribution of pesticide,

reduced mechanical damage to crops, and reduced operation hazards

(Stanley, On-line). This process allows the farmer to apply exact amounts so

pesticides are not over used and spills are less likely. Runoff can be

minimized by the use of GIS and GPS systems to produce a three

dimensional computer image of your land and there by locate problem areas

that precautions should be taken. This sort of a program is going on in Iowa

and is funded by the government (Havens, On-line).

Sewage treatment would greatly reduce the amount of harmful

nutrients that cause eutrophication. There are many different way that

different areas of the world go about reducing the release of nutrients into

bodies of water. This is another use for GIS and GPS systems to produce

three dimensional computer images that can allow us to better observe the

extent of eutrophication. This project is being used in the Chesapeake Bay

area (Eutrophication, On-line). In California they are using marshes to filter

partly treated sewage and the water that flows out on the other end is cleaner

than the water that it is flowing into. The marsh cleans out the water and

uses the nutrients to grow more algae which is good for marsh areas. In

Nova Scotia they are treating sewage naturally. They are using large clear

cylinders to hold snails, fish, and plants such as cattails and irises. The irises

and cattails absorb toxic chemicals and the snails eat the growth on the sides

of the cylinders so sunlight can penetrate the glass and allow the plants to

grow (Redwood, On-line).

Industry contributes a lot in water pollution, but there are things that

can be done to eliminate a lot of it. In the case of acid rain industries can

install scrubbers to remove some of the acids from the exhaust being

released. Also the waste that is release directly into the water can be treated

by treatment plants that add chemicals that are antagonistic to the harmful

chemicals and offset the effect.

The pollution in ocean environments is a serious problem that must be

addressed immediately. There are ways to reduce each of the problems that

have been discussed. Pesticides can be used in smaller amounts, better

pesticides developed, and proper methods used. Sewage can be treated

before it is released to reduce eutrophication. Industrial waste can be reduced

by proper treatment and uses of pollution control devices such as scrubbers.

If each of these problems are addressed quickly and properly than the ocean

could be on its way to being clean and flourishing once again.