

A Survey of Marine Pollution based on Oil Spill, Air and Land Pollutions

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Abstract: In this study, the marine ecosystem polluted by a huge amount of oil spills, industries outlet wastages to rivers, lakes and those toxic evaporation polluting sea living organisms like penguins, birds, mammals, etc., even air polluting marine ecosystem by carrying lot of dusts from industries which outlets burned gases in open atmosphere. Most ships offshore may sink sometime with a load of oil or leakage happens on the sea, these spreads oil surrounding environment of sea and shores where animals get affected due to oil coated with furs and cause liver or lung damage, poison, die within 2 days. Oil spilling not only affected marine ecosystem animal but it also evaporates toxic gas in open atmosphere which is inhaled by human beings, cause liver, respiratory diseases. Land junks, plastic wastes, ship wastages are all thrown in seas to make them more polluted which leads to the toxic environment where no one will survive the environment is completely out of hands.

Key words: Marine pollution, oil spilling, land pollution, air pollution, toxic environment, cause human and animals

INTRODUCTION

Now a days, an environment is completely polluted by various fields of pollutions like air, water, land, sound, etc., these pollutions lead to change environment into pollutants where breathing oxygen from atmosphere can be toxic in few decades. Industries growth cause severe damage to environment where wastages mixed to river waters, burned gases outlet in open atmosphere in following years. Ecosystem completely suffers due to this wastage co-existed with rivers, pools, lakes (Vegter *et al.*, 2014).

Early decades, marine routes are used to ship goods from one country to another but currently, marine waters are used to drop wastages, industry wastages, ship leakages of oil over the surface of the sea which later moves to shores and appends on rock layers. The main course of oil spilling environment and recovery process of cleaning shores the animal affected by oil, spread oil in open seas is contaminated using equipment's (Rodd *et al.*, 2014). Recovery investments to clear oil spills from environment takes manual contamination as well as instrumental contamination, ever clearance of oil spills from oceans and sea shores will not going to end. Coral reefs under water will hold on to oil substances spread on a surface of reefs will start to pollute under sea animals.

Marine pollutions suffer from acidification, eutrophication, plastic debris, toxins and underwater noise. Acidification occurs due to carbon inhaled from atmosphere profoundly creates the layer on oceans with

calcium carbonate where carbon di-oxide increased and cause acid surfaces on ocean (John *et al.*, 2016). Eutrophication is wastage connected to river enters the marine ecosystem, chemical nutrient wastages which reduce oxygen level on the marine ecosystem and create the dead zone. Plastic debris is a complete action of human beings where they use plastic products and drop on land, a current flow of water brings it to the marine ecosystem.

Toxins are the chemical elements that are caused by the human which led via a river where mercury, lead, nickel arsenic are providing low concentration toxic on ecosystem (Fox *et al.*, 2016). These toxins evolved with a living organism in the sea and created a tissue on the layer of animals under the sea and cause poisonous to them. Underwater noise pollution impacted from ships passing above water, low-frequency sonar; keep on traveling on the marine atmosphere. Mammals produce larger sounds to communicate between them which cause other animals to speak louder on ecosystem and turns out to be a noise pollution on marine ecosystem (Sarbatly *et al.*, 2016). Marine applications using mechanical properties aluminum metal matrix composite evaluation is presented by Venugopal and Manoharan (2015). Wastewater treatment of plant growth promotion using bioprospecting of halotolerant marine bacteria from the Marakkanam and Kelambakkam salterns, India (Vinothini *et al.*, 2014). Marine associated microorganisms based production of bioethanol from pineapple and papaya wastes is described by Jayaprakashvel *et al.* (2014). Marine surveillance based novel wave bird

concept is discussed by Jacob and Dheepak (2014). Bactericidal potency using purification of protein from marine edible oyster *crassostrea madrasensis* is approached by Muthiezhiyan *et al.* (2014).

MATERIALS AND METHODS

Impacts on the environment: The pollutants over marine are majorly affected by oil spill where 706 millions of gallons oil spilled on oceans every year. This oil spill caused birds and mammals to act vulnerable even reject their kids from providing food. Oil spread on furs of animal, causing liver and lung damage. Later, it acts as poison and animals die in two days due to this pollution of oil spilling. Affected animal will reduce their insulating effect so there is the increase in body temperature and cause hypothermia. General Aerobic Bacteria (GAB), Sulfate Reducing Bacteria (SRB) and Acid Producing Bacteria (APB) are evolved into an ecosystem and remove oil substances.

Some major oil spills happened over decades is 'Prestige' oil spill, 'Exxon Valdez' oil spill, 'Montara' oil spill, Gulf, Arabian Gulf oil spill and Deepwater Horizon oil spills.

According to surveys, the oil spill turns out on temperature and even cause air pollution when it evaporated into gas on an open atmosphere. Coastline shores effect on rock layers is covered with spills which form a layer along rock cause toxins to the environment. Kuwait owns the place of largest oil spill all over the world (143,909) tons of crude oil (1,058,000) thousands of barrels, US gallons (44,436,000) spill on marine oceans.

Impacts on the human: Oil contamination may cause respiratory diseases to human and affect the liver or lung when inhaling polluted air toxins. Even workers on oil rig died in the explosion and sudden fire. Oil spill contaminates more drinking water supplies which lead to insufficiency of water, side effects on the human body if contaminated water is taken. Surrounding environment will be polluted and cannot be inhaled by any one due to toxins in an atmosphere.

Industries and factories give off various pollutants into the environment including the land air and waters. It is estimated that about 50% of all pollution is as a result of industrial and manufacturing activities. It only displays how industries and factories are responsible for giving off toxic and dangerous materials into the environment. Illnesses, loss of life and destruction of the ecosystem are some of the pollution outcomes that take years to manifest. Even so, there is a wide range of industrial pollution effects along with their serious consequences. Below are some of the prime effects of industrial pollution.

Global warming: Global warming is the most severe outcome of industrial pollution, witnessed on account of the steady rise of industrial activities. Industries release into the atmosphere a variety of greenhouse gases including carbon dioxide (CO₂) and methane (CH₄). These gases absorb thermal radiation from the sun thereby increasing the general temperature of the earth, leading to global warming.

Global warming has several severe effects on human health and the environment. Rise in water levels, melting of glaciers, extinction of polar species, tsunamis, flooding and hurricanes are some of the dire effects of global warming. Furthermore, global warming has threatened human survival and presented health risks such as the increased incidences of diseases like cholera, plague, malaria, lyme disease and so on.

Water pollution: Pollutants discharged from the industries have widespread implications and one of the unpleasant effects is in water bodies. Industries demand lots of water for efficient products such as cooling cleaning and treatment and as such the water drawn from the water sources is never the same after use. Inappropriate contamination of used water and the discharge of different industrial waste water into water sources often result in water pollution.

In most cases, the water is contaminated with dangerous chemicals, radioactive materials, heavy metals or organic sludge. For this reason, dumping of the waste water directly into waterways or oceans negatively impacts on marine life, humans and the environment on various aspects.

Air pollution: Based on the increased counts of factories and manufacturing processes both large and small scale, gaseous emissions have continued to compound. This makes industrial pollution one of the leading causes of air pollution. The emissions from different industries contain gaseous contaminants such as sulfur, carbon dioxide (CO₂), oxides of nitrogen, methane and so on.

These gases when too much in the atmosphere, frequently results in several illnesses and environmental hazards. Formation of acid rains, the presence of smog and heightened incidences of respiratory disorders among humans are some of the implications of air pollution.

Soil pollution: Soil contamination occurs when the soil loses its fertility and structure owing to diverse natural and artificial phenomenon. Disposal of industrial wastes into landfills is among the false aspects contributing towards soil pollution. Industrial wastes have in them varying amounts of toxic materials and chemicals such that when deposited in landfills, it accumulates in the top soil thereby depreciating the fertility and biological

activity of the soil due to soil poisoning such implications eventually contribute to ecological imbalances thus creating problems in crop productivity. Apart from that the chemicals and toxic materials in poisoned soils accumulate in plants grown in such areas causing health problems to those who consume such crops.

Effect on human health: The World Health Organization (WHO) revealed that outdoor air pollution accounts for about 2% of all lung and heart diseases. WHO also underscores, around 5% of all lung cancers and 1% of all chest infections are implications of outdoor air pollution.

In brief these statistics indicate just how industrial air pollution depreciates human health. For instance, one of the worst industrial disasters of all times that took place in Bhopal, India in 1984 claimed the lives of >8,000 people and the effects were still being felt more than two decades later. This means, industrial air pollution may not manifest immediately but takes several years.

Industrial toxic and chemical wastes that are disposed of water bodies or landfills are also responsible for cancers and human cell poisoning. For instance, exposure to inorganic arsenic causes tumors to form. Above all, industrial pollutants are responsible for thousands of illnesses and premature deaths across the globe.

Wildlife extinction: The tendency of industrial and manufacturing processes that always demands production resources and repeated exploitation of raw materials has cumulatively led to the destruction of forests and the natural habitats that support wildlife.

Acts such as mining, deforestation and utilization of water resources for industrial production have destroyed natural habitats and forced organisms to move further into the wild, exposing them to predators and intolerable living conditions. Consequently, some wildlife species have faced extinction while several others remain highly endangered. Industrial wastes, chemicals, emissions or accidental leaks, fires, oil spills and so on have also been prime contributors to wildlife extinction.

Furthermore, these environmentally damaging materials take several years to clean-up thereby compounding the effects. For example, the BP oil accidental spill in 2012 claimed thousands of marine life and some of them were among the rarest species on earth. Even after some time had passed, marine animals continued to die.

Other common implications: Other common implications of industrial pollution encompass damage to structures and buildings and increased risks of different occupational hazards like exposure to asbestos, chemical dust, among other mineral or metallic particles.

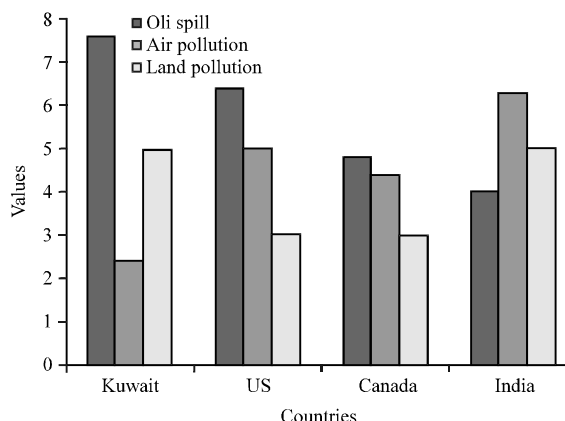


Fig. 1: Comparison chart

RESULTS AND DISCUSSION

Figure 1 comparison between four countries that impact marine pollution. Kuwait and the United States leads to oil spill pollution which spilled millions of gallons on oceans and Kuwait owns largest oil spill place all over the world. Canada is a moderately polluting marine environment with an equal spread of oil, air and land pollution. India emerged quickly on industries that cause land and air pollution more on the marine environment. Where oil spill pollution in India is less compared with other countries.

CONCLUSION

Marine ecosystem suffered the lot in recent decades with various pollutions that turn out and affected thousands of lives on seas and human around ocean regions. Oil spill improvised on oceans quickly that caused more than other pollutions which severely affect the marine environment. Finally, reducing oil spill on oceans may prevent lives from sake.

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