

Committee: Environmental Commission

Issue: The reduction and responsibility for ocean transboundary pollution

Student Officer: Saskia Caple

Position: Deputy President of the Environmental Commission

Introduction

The protection of the environment is a critical issue in need of addressing. Researches only began to consider marine pollution as a great issue in 1960. Since then, the problem has only gained in severity with approximately 1.4 billion tons of rubbish entering the oceans each year. Only 5% of the world's plastic waste is recycled whereas 40% enters landfill and approximately 33% finds its way to the ocean. When a country generates pollution, it is likely to enter waterways such as oceans and eventually cross aquatic borders, affecting the environments of surrounding nations due to the global circulatory system of the oceans. The problem is therefore no longer an issue to only the country of origin but has become a threat to all surrounding nations. According to the UN, if we do not reduce plastic production, there will be more plastic than fish in the oceans by 2050. Many factors contribute to the ocean's pollution situation such as noise pollution from large vessels and accidents concerning ships which cause flotsam to be expelled into the water. In order to combat the issue, delegates should focus on instilling systems to reduce the initial production of waste on land with the risk of entering oceans and propose frameworks to simultaneously prevent harmful materials from infiltrating into oceans and cleanse the water bodies of already existent pollution. Delegates should also address the responsibility aspect for the ocean pollution through means of educating and promoting the necessity of clean waters. Delegates should remember the mission of the United Nations to ameliorate the global situation by encouraging wealthy countries to help developing countries and thus sharing responsibility for the sanitation of our oceans whilst recognizing the correct governance arrangements.

Definition of Key Terms

Transboundary pollution

Pollution that is released from one country but is also able to affect other countries via water contamination.

Seabin

A Seabin is a contraption produced by The Seabin Project and installed in waters surrounding commercial ports, docks, as well as marinas, in order to collect floating rubbish and potentially oil. It is a marine rubbish bin.

Microplastics

Microplastics are miniature fragments of plastic with widths generally smaller than 1cm. They are the product of larger plastic items, broken down through the process of photodegradation.

Contamination

The process through which something is made impure by coming into contact with pollution or poison.

Point source pollution

Point source pollution is any identifiable source producing an output of pollution. Examples include pipes, oil pumping stations, and factories.

Nonpoint source pollution

Nonpoint source pollution is one of the largest pollutants of the planet. It refers to the runoff caused by rain or snow-melt that flows through and over the ground, collecting man-made and natural chemicals, filtering them into areas such as coastal waters and groundwaters.

Effluents

Effluents are the wastewaters, treated or untreated, discarded from factories, sewers, or treatment stations.

Flotsam

Flotsam is the name given to waste found washed up on beaches or floating in the ocean. The term is often used to refer to floating debris from a damaged ship or its cargo.

Persistent Organic Pollutants

These pollutants are toxic to wildlife and humans. They are Carbon-based chemical substances with the ability to stay in-tact for extremely long periods of time and spread throughout Earth through processes involving water, soil, air, and droppings from animals such as seabirds. POPs include pesticides, Industrial chemicals, and by-products.

Background Information

Contributing factors

The oceans are full of many different pollutants causing various effects. These pollutants include oil resulting from oil spills due to accidents involving oil tankers, refineries, pipelines, barges, and others. Oil pollution prevention can be controversial due to the elevated costs. MARPOL 73 introduced the provision of the implementation of the Segregated ballast tanks standard in order to avoid oil spillages from oil tankers. This regulation was ill-received by many private oil companies due to its incredibly costly nature.



Caption #1: Image of an oil spill in Gulf of Mexico

Another polluting factor to consider is sewage. This discharge enters marine waters from unfiltered sewer lines as well as from treatment plant wastewaters. The decomposition and mixing of different waste products in the sewers and landfill cause harmful substances to form and leak into the oceans. Contributing factors also include plastic products. It is believed that plastic contributes to up to 90 % of all debris in the oceans. The Great Pacific Garbage patch encompasses the Eastern and Western Pacific Garbage patches. Approximately one fifth of these masses are flotsam that have fallen off ships and oil stations however the majority consists of landfill that has infiltrated the ocean. Scientists have discovered up to 750 000 pieces of microplastics in one square kilometre of the great Plastic vortex.

Harmful effects of ocean pollution

Endangering marine animals

Marine wildlife is greatly affected by oil spills found in various areas of the ocean. The oil left on the surface of the water can stick to animals feathers and enter their gills, making it difficult to move and almost impossible to fly or feed their offspring. Most of the contaminated animals cannot remove the oil and die as a result. Plastic detritus is responsible for the deaths of more than 100,000 marine vertebrates as well as over a million seabirds per year. These animals mistake items such as lighters and syringes for food, leading them to ingest the objects and subsequently die.

Effect on the food chain

Industries and farms use many different chemicals and fertilizers in the manufacturing of their products. These chemicals will then dissipate into the ground, and through runoff, make its way to the oceans where zooplankton eat it. These zooplankton are then eaten by small fish. As the substances make their way up the food chain, the concentration of the chemical in each animal increases reaching critical levels. The poisons make their way into humans through eating seafood. These steps constitute the process of biomagnification. Effects on humans are can include birth defects, cancer, and other long-term health issues.

Depletion of the water's oxygen content

All living species in the oceans need oxygen in order to thrive however the increase in microplastics and microfibers ejected into the ocean causes ocean deoxygenation. Oceans have lost approximately 2% of their oxygen levels in the past fifty years. This is partially due to the necessity of oxygen in the process of decomposition of the particles. The decrease in oxygen affects the quantities of marine organisms as few can survive under low oxygen level conditions.

Environmental disasters

In order to fully understand the detrimental effects of pollution on the ocean and its surrounding environment, past environmental disasters caused by human activity should be considered.

Minamata disease

In 1956, the Minamata Disease was discovered. The epidemic was caused by tremendous amounts of methylmercury found in the bay of Minamata City in the Kumamoto prefecture to the South-West of Japan. This was the direct result of the Chisso Corporation's chemical factory releasing it's industrial wastewaters, a point-source pollution, into the coastal waters. The toxic chemical bioaccumulated in fish and shellfish which caused mercury poisoning when eaten. The disease affected over 2000 people and killed almost 1000. Many children were born with deformities and malfunctioning central nervous systems. The disease also affected

cats, dogs, pigs, and marine wildlife. Due to currents and animal migration, the methylmercury has likely been transported all around the Earth's oceans.

Deepwater Horizon

On April 20, 2010, Deepwater Horizon, an oil drilling rig in the Gulf of Mexico exploded and sank, killing 11 workers and injuring several others. The incident caused 635,6 million litres of oil to spill from the damaged well over the course of 87 days before being successfully capped on July 15, 2010. The oil rig was owned by Transocean and had been leased to BP. The oil spill is described as the biggest accident the oil drilling industry has ever encountered. The spill created a 35,4 km long oil plume at the ocean surface in the Gulf of Mexico but millions of litres also sunk to the ocean floor, killing and damaging organisms such coral, fish, dolphins, and seabirds. Dolphin death rates increased from 63 to 200 deaths per year in 2011. Despite many attempts to control the oil such as spraying dispersants over oil slicks in order to break them down into smaller molecules and increase their chance of bacterial degradation or evaporation, the oil remains in the ocean's ecosystem and continues to cause damage to marine wildlife.

Timeline of Events

Many countries have taken steps in order to combat the environmental issue. Both international and local regulations have been implemented.

Date	Description of event
1972	United States Congress enacts the MPRSA (Marine Protection, Research and Sanctuaries Act)
1973	International Convention for the Prevention of Pollution from Ships (MARPOL)
1996	The London Protocol is adopted
2001	The Stockholm Convention on Persistent Organic Pollutants is adopted on May 22nd
2014	India launches its Swachh Bharat Mission

UN Involvement, Relevant Resolutions, Treaties and Events

The United Nations aims to combat issues through unifying countries to work together. This is particularly crucial when the issue in question is of a transboundary nature, meaning involving all

countries surrounding these oceans and contributing to their increased amount of pollution. The United Nations produce an annual resolution on the ocean and the law of the sea.

- Founding of the United Nation Environmental Programme (UNEP), 15 December 1972
- Founding of the United Nations Convention on the Law of the Sea, 10 December 1982
- The United Nations Conference on Environment and Development (UNCED) and thus production of Agenda 21, 3-14 July 1992
- Founding of the Global Programme of Action (GPA), 1995
- Ocean and the Law of the Sea resolution adopted, 29 November 2005, (**A/RES/60/30**)
- Publication of Ban Ki-moon's "The Oceans Compact", July 2012
- Transboundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean, 2015

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Dr Stephen Juan

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