

# The environmental threats of cruise liners environmental sciences essay



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HMD 376DSustainability in Hospitality IndustryWater Pollution - Sewage, waste, toxics, run- off Cruise linesReportFor: Dr Madeleine HeveraBy: Steven Lu Jun Guang (Rebel 14)April 16, 2013

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### 1. Introduction

The health of the Earth's coral reefs are on the decline. And it's supposed to hit rock bottom before the end of this century, according to Professor Peter Sale, the head of the United Nations University Institute of Water. (Brake, 2011) Should Professor Peter's prediction comes true, humans born in the next century will not have the opportunity to see any coral reef in the ocean. That is, if there are still any humans left. The truth is, coral reefs are very vital to the survival of our planet. Coral reefs are like the rainforests of the sea, they provide both food and shelter for many underwater species. One of them being the prominent phytoplankton, a type of tiny marine plants. They are responsible for the production of more than half the oxygen that we take in and absorb massive amounts of the greenhouse gas carbon dioxide (CO<sup>2</sup>) which helps to slow global warming and climate change. Thus, contributing to the creation of a sustainable environment on Earth. (PETIT) Yet, we humans are continually destroying something so essential to us with the recreation which has come to be known as cruising. The cruise industry by many accounts is a sizeable source of pollution to the ocean and its inhabitants. On average, a cruise liner introduces as much as 30, 000 gallons

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of blackwater, 255, 000 gallons of graywater and 7, 000 gallons of oily bilge water into the sea every day. These waste carries bacteria that are detrimental to the health of both humans and marine life. Coral diseases have also been found to be linked to human sewage or otherwise known as blackwater in recent studies. (Oceana) This paper will trace the environmental impacts of cruise liner, first, delving into the brief history of cruise liners. Next, identifying the various pollutants introduced to the sea by them. And subsequently, the various practices and regulations that are in place to curb the problem will be examined. Last but not least, a list of recommendations to improve the situation.

## **2. Brief History of the Cruise Industry**

Knowing is half the battle. In order to get to the root of the problem, we will first look at a brief history of the cruise industry. Found in 1965, Princess Cruises, was the first of today's present cruise lines to concentrate on the vacation cruise market. Other major players worth mentioning today, Carnival Cruise Lines has its roots traced back to 1972 while Royal Caribbean was also launched in the late 1960s. (Klein, 2009) The number of North Americans taking a cruise has multiplied rapidly since the appearance of vacation cruising some 40 years ago From 600, 000 to 1. 4 million passengers annually in the 1970 to 1980 period to 13. 2 million annually in the 2000 to 2008 period. (Klein, 2009) Clearly, there's no sign of the cruise market cooling down. In fact, analysts has projected that the cruise market is set to become larger. Over a 4 years period from 2008 to 2011, 38 new liners with more than 100, 000 berths are constructed. This easily translates into a increase of 5 million additional passengers on a yearly basis. (Klein,

2009)Of course, with the rapid development of technology coupled with the strong demand in vacation cruises, the dimension of liners has also expanded significantly. Cruise ships in the past could only ferry 750 to 1000 passengers but those figures are getting pathetic as the years goes by. Oasis of the Seas, introduced by Royal Caribbean in 2009, weighs 220, 000 tons and is capable of ferrying 7, 000 passengers, not counting the accompaniment of over 2, 000 crew members. (Klein, 2009)Naturally, as the size and the capacity of the cruise liners grows, the environmental threats that they bring to the ocean is being magnified as well. The Oasis of the Seas is akin to an average town floating on the sea when it's at full capacity. One can only imagine the amount of pollution that it creates. And the Oasis is just the tip of the iceberg.

### **3. The Environmental Threats of Cruise Liners**

In 2008, the United States Environmental Protection Agency (EPA) released a damaging report on cruise liner discharge assessment. The report looked at the five common types of pollutants produced by cruise liners namely, sewage, graywater, oily bilge water, solid waste and hazardous waste. (Agency, 2008)

#### **3. 1Sewage**

Sewage or otherwise known as black water refers to biological wastes and the wastes from washrooms and other containers that are deliberate for containing wastes. In a survey conducted by EPA in 2004, on average, a single cruise liner produced from 1, 000 to 74, 000 gallons of sewage daily. (Agency, 2008)Biological wastes are harmful because of their potential to be a carrier to many types of pathogens. Hepatitis A and E, just to name a few. <https://assignbuster.com/the-environmental-threats-of-cruise-liners-environmental-sciences-essay/>

They pose a very serious threat not just to marine life but to humans as well. When humans consume raw or ill-prepared seafood that are contaminated by the sewage, they are in risk of being infected with the said pathogens. (Agency, 2008)

### **3. 2Graywater**

Graywater on the other hand, refers to wastewater from the bathrooms, laundry and kitchens. EPA claims that the estimated graywater produced by a single cruise liner on average ranged from 36, 000 to 249, 000 gallons on a daily basis. (Agency, 2008) Similar to sewage, graywater may contain many harmful pathogens as well. Likewise, their impact shouldn't be neglected. (Agency, 2008)

### **3. 3Oily Bilge Water**

Oily bilge water is made up of cleaning fluid, lubricants, oily fluids, water and other similar waste that are found in the most bottom part of a cruise liner originated from mechanical components of the liner. Due to its many sources, it's difficult to track the amount of oily bilge water being produced by cruise liners. Best accurate data for reference is by the Alaska Department of Environmental Conservation. In 2000, they reported that cruise liners cruising in Southeast Alaska generated 1, 300 to 5, 300 gallons of bilge water every 24 hours. (Agency, 2008) Oily bilge water contains oil that is a highly deadly compound which is extremely harmful to marine life. Oil that are thick and dense does not fade away, they need to be cleaned up which costs manpower and financial losses. On top of that, they has the harmful ability of coating animals that live in the oceans. Again, it can bring

the harm back to humans by indigestion of seafood that are contaminated by it. (Agency, 2008)

### **3. 4Solid Waste**

Solid waste are basically unwanted items such as plastics, glass, food etc. that are discarded by the cruise liners or its passengers. These are mostly non-hazardous. Taking reference from a 1999 Royal Caribbean Cruises Environmental report, a liner can produce up to 15 tons of waste in a single day. Of course, the amount of solid waste that a single liner can generate is directly related to its size and its total passengers capacity. The bigger it is, the more it carries, the more harm it will bring to the environment. (Agency, 2008)When solid wastes are dumped into the oceans, they are known as marine debris. Marine life and humans at large are at risk of being trapped by marine debris. Furthermore, marine life might accidentally consume them and develop adverse effects on their health. (Agency, 2008)

### **3. 5Hazardous Waste**

Hazardous waste are waste that encompass harmful compounds. They are usually kept on the liners until they anchors at a dock before they can legally dispose them at a landed facility. (Agency, 2008)Because of the strict laws governing hazardous waste dispose, it's not usually a major concern with regards to environmental impact. Although however, if there's a lapse in the management of the disposal of hazardous waste, it can become a very lethal impact on the environment. (Agency, 2008)

#### **4. Addressing the Pollution**

Now that we have identified the pollutants, we will take a look at the various rules and regulations that are in place to address the issue and to determine whether the existing efforts are sufficient. Oceana, the biggest international organization fighting for ocean conservation, released a report on United States laws and regulations governing cruise liners pollution. According to them, the laws and regulations are seriously lacking when it comes to policing cruise liners pollution. When it comes to sewage, cruise liners are given the go ahead to dump treated sewage and graywater practically anywhere they go. Except for Alaska. It is also not against the law to release untreated sewage as long as they are out of the 3 miles radius from the shore. In addition, it is mandatory for cruise liners to feature waste treatment systems, known as marine sanitation devices (MSDs). Last but not least, they are required to keep track of their own discharges.