

The impact of plastic pollution on marine life

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1.0. Introduction

Plastic pollution has become one of the biggest environmental threats to marine ecosystems. Currently, plastic pollution is a phenomenon that we observe at a very high rate and is increasing over time, affecting our most important marine waters. Millions of tons plastic waste enters the oceans every year, affecting marine organisms at all levels of the food chain. This research explores the sources, consequences, and possible solutions to plastic pollution in marine environments. The oceans, covering over 70% of the Earth's surface, play a crucial role in sustaining life on our planet. However, these vast and diverse ecosystems are under increasing threat due to human activities, particularly plastic pollution. Every year, on estimated 8-12 million metric tons of plastic waste enter the world's oceans making plastic pollution one of the most pressing environmental issues of the 21st century.

Plastic, due to its durability, affordability and versatility, has become an essential part of modern life. However, its non- biodegradable nature leads to long-term accumulation nature leads to long-term accumulation in marine organisms, disrupts food chains, and damages ecosystems. From micro plastics that contaminate plankton to massive plastic debris that entangles sea creatures, the consequences of plastic pollution are devastating.

2.0. Keywords

Micro plastic, toxic chemicals, Marine biodiversity, Marine Ecosystem, Pollution control

1. Micro plastics

Micro plastics are tiny plastic particles measuring less than 5mm in diameter. They come from the breakdown of larger plastic items or are intentionally manufactured for use in cosmetics, personal care products, and industrial processes. These micro plastic wastes are so small that they betray us to pollute the water, so we have to reduce plastic in every work that we do on a daily basis. Micro plastics are very small molecules of plastic that are harmful to aquatic life. Marine life is a wonderful source of life and it is our responsibility to conserve it, so we must continue our work without causing any harm to the environment. Wastes from ships used at sea get mixed up in sea water and fish die.

2. Toxic Chemicals

These chemicals accumulate in marine organisms, becoming more concentrated further up the food chain. Toxic chemicals are very dangerous and the toxic effluents from various industries pollute our sea water. This affects large species including fish, marine mammals, and even humans who consume seafood. Toxic substances, such as heavy metals and persistent organic pollutants, accumulate in marine organism 'tissues. . So heavy metals like mercury and lead cause brain damage in fish and mammals.

3. Marine biodiversity

Marine biodiversity and ecosystems are intrinsically connected to a wide range of services that are essential to sustainable development. These relationships are often complex and dynamic, and are influenced by feedback loops and synergistic effects. It covers everything from tiny plankton to massive whales and includes ecosystems like Coral reefs, deep-sea trenches, mangroves and sea grass beds.

4 Marine Ecosystems

Marine ecosystems are important sources of ecosystem services and food and jobs for significant portions of the global population. Human uses of marine ecosystems and significantly threats to the stability of these ecosystems. Environmental problems concerning marine ecosystems include unsustainable exploitation of marine resource, marine pollution, climate change, and building on coastal areas. These systems contrast with freshwater ecosystems, which have a lower salt content. Marine waters cover more than 70% of the surface of the Earth and account for more than 97% of Earth's water supply and 90% of habitable space on Earth.

5. Pollution Control

To control pollution in the marine environment, key strategies include: Reducing plastic use, properly treating sewage before discharge, regulating industrial waste, implementing stricter sea waste disposal laws, managing oil spills with booms and skimmers, utilizing ballast water treatment technologies to prevent invasive species spread, promoting sustainable fishing practices, and encouraging the use of environmentally friendly cleaning products on boats and in coastal areas.

3.0. Content analysis

The main reason for me to write this article is because of the mistake made by humans for the sea creatures that live with us all that time, we are causing the loss of life of creatures, on the sea shore and on the sea. Every creature living on earth has certain rights but we are not able to protect them.

According to a survey, 75 to 199 million tones are discharged into the ocean through rivers and streams. We know through some types of surveys that the use of plastic has also increased with the changing times. The use of plastic bags and plastic bottles is destroying the survival of marine creatures in the soil. Since the birth of our earth, a variety of organisms,

including humans, have been living in the soil. Anything can be made and destroyed in this world but only plastic is destroyed so late that it is dangerous for us.

Plastic pollution significantly impacts marine life through ingestion, entanglement, and contamination, often leading to injury, starvation, and death, with the most affected species including sea turtles, seabirds, and marine mammals, primarily due to mistaking plastic debris for food and becoming trapped in plastic waste; the breakdown of plastic into micro plastics further exacerbates the issue by entering the food chain at lower levels, potentially causing long-term physiological disruptions across various marine organisms. Marine plastic pollution has impacted at least 267 species worldwide, including 86% of all sea turtle species, 44% of all seabird species and 43% of all marine mammal species. The impacts include fatalities as a result of ingestion, starvation, suffocation, infection, drowning, and entanglement.

Nature is very beautiful and gives life to many kinds of creatures. In this beautiful world! Marine life is a part. This ocean is vast, and we get only 1% of good water from it! The sea water evaporates and falls back to us in the form of rains and becomes the basis for growing crops. But in recent times, the consumption of plastic has increased economically, resulting in water pollution. This is because of ethically used plastic items, bags, and plastic containers - you know it takes about 100 years for a single plastic bag to burn in the earth.

Sometimes the plastic bags that we use are dumped in one place and when it rains, the water enters the canals, the canals into the rivers and the rivers into the sea. Along with this, these plastic bags that we use also reach the sea through water and are the cause of death of the aquatic creatures living in the sea. To survive on land, the fisherman's travel across the ocean in boats. They use nets for fishing in water. These nets fall into the water several times. Such nets can cause whales and sharks to become entangled in the water and kill large aquatic creatures. A few hundreds of creatures are being killed by human use.

It was the year 2006 when a container ship named MV Hyundai Fortune was traveling from China to Europe when the accident happened.

MV Hyundai Fortune, a container ship owned by Kosmo, was on its way from China to European ports in 2006. An unknown explosion occurred below the deck due to which around 60 to 90 containers fell into the sea. The fire started by the explosion soon spread throughout the ship, followed by secondary explosions, causing more containers to fall into the sea. The fire is believed to have started due to the loading of petroleum-based cleaning fluids in a container kept near the engine room. Shipper failed to advice. The dangerous nature of the shipper is not communicated to the shipper to avoid the special handling fees charged for transporting hazardous materials.

Every creature born on this earth has the right to live freely, but sometimes due to human activities, sea creatures must die. Not only the loss of human lives but also the death of living beings through a dangerous event is also creatures.

Water polluted in seaway.

4.0 Conclusion : (TELUGU AND ENGLISH)- QUARTERLY - MULTIDISCIPLINARY -
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The ocean is perhaps the most vulnerable environment to plastic waste. Once plastic enters the sea, it has no boundaries – waves and storms can carry plastics to even the furthest reaches of the ocean, where they accumulate into large gyres on the high seas or become embedded in shorelines and delicate coastal ecosystems; they’ve even been found on uninhabited islands. After some months or years at sea, plastic breaks down into smaller and smaller pieces, battered by waves and storms, eventually to sizes smaller than a grain of sand. This makes retrieving plastics from the ocean extremely difficult – almost impossible.

Plastic pollution poses a severe threat to marine life, disrupting ecosystem, harming marine species, and affecting biodiversity. Countless marine animals, from tiny plankton to large whales, suffer from ingestion, entanglement, and habitat destruction due to plastic waste. The persistence of plastic in the ocean leads to long-term environmental consequences, including bioaccumulation of toxic substances in the food chain, which can ultimately impact human health. To mitigate this crisis, immediate and collective effects are required, including reducing plastic production, promoting sustainable alternatives, enhancing waste management, and enforcing stricter regulations. Public awareness and responsible consumption also play a crucial role in protecting marine life. Only through combined global actions can we ensure a healthier ocean for future generations.

5..0. Bibliography :

1. Plastic pollution , Dr. Gail krantzberg, CRC Press, 2023
2. For successfully completing my article, I have taken help from following websites.
Chatgpt, www. Wikipedia.