

## Plastic: A great threat to aquatic life

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### **Introduction**

Plastics are organic substances that are made up of natural products like cellulose, coal, natural gas, crude oil, etc. They can be synthetic or semi-synthetic in nature having very high molecular mass. Plastics are used in packaging, automobiles, toys, furniture and medical supplies. The decomposition rate of plastic is very slow when it is discarded after use because it is composed of large molecules. It leads to plastic accumulation and the main contributors to it are food and Beverages (31.14%), Bottle and Container Caps (15.5%), Plastic bags (11.18%), Beverage Bottles and Containers (7.27%). Since the 1950s, it is estimated that one billion tons of plastic waste has been discarded. It has also been estimated that only 9% of plastic is recycled. Plastic kills a large number of aquatic species by means of ingestion, suffocation and entanglement. Marine species such as whales, fishes and turtles ingest plastic waste by mistake and then it clogs inside their stomach leading to death by starvation. Apart from this, plastic also reduces their ability to swim, causes internal injuries, infections and lacerations. The government is adopting serious measures to reduce plastic pollution. If current trends continue, by 2050 the plastic trade might account for 20% of the world's total oil consumption. Plastic has numerous valuable uses, we've got become smitten by the single

-use or disposable plastic with severe environmental consequences. Around the world, one thousand plastic drinking bottles are purchased each minute, whereas up to 5 trillion single-use plastic bags are used worldwide once a year. In total, 50% of all plastic made is intended to be used one time then thrown away. Plastic waste is currently therefore omnipresent within the natural surroundings that scientists have even steered it might function a geologic indicator of the human dominated era. Researchers estimate that over 8.3 billion tonnes of plastic has been made since the 1950s. If current trends continue, by 2050 the plastic trade might account for 20% of the world's total oil consumption. Just 9% are being recycled while; about 12% has been incinerated, whereas the remainder 79% has accumulated in landfills or the natural surroundings.

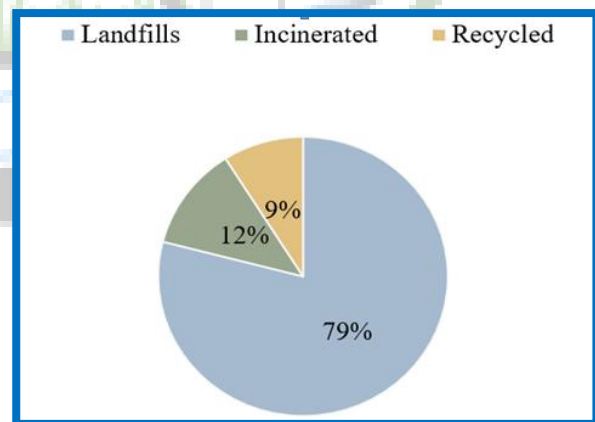


Fig 1- Fate of plastics in environment

## Contributors to Plastic pollution

Cigarette butts whose filters contain small plastic fibres were the foremost common kind of plastic waste found within the surroundings in an recent world survey. Plastic bottles, bottle caps, food wrappers, grocery luggage, instrumentation lids, straws, and stirrers were consecutive most typical things. Several people use this merchandise each day, while not even pondering wherever they could possibly end up. Rivers carry these plastic waste from deep inland to the ocean, creating them major contributors to ocean pollution. Plastic waste in rivers or in oceans can persist for centuries and also releases chemicals used during their

5 trillion single-use plastic bags are used worldwide every year.

5 trillion

If current trends continue, by 2050 the plastic industry could account for 20% of the world's total oil consumption.

20%

More than 8.3 billion tonnes of plastic has been produced since the early 1950s.

8.3 billion

About 60% of that plastic has ended up in either a landfill or the natural environment.

60%

More than 99% of plastics are produced from chemicals derived from oil, natural gas and coal all of which are non-renewable resources.

99%

Only 9% of all plastic waste ever produced has been recycled.

About 12% has been incinerated

Cigarette butts whose filters contain tiny plastic fibres were the most common type of plastic waste found in the environment in a recent global survey. 79% has accumulated in landfills or the natural environment.

production. The same properties that make plastic so useful (*i.e.*, durability and resistance to degradation) also make them nearly impossible for nature to completely break down. Most plastic things would not get disappear easily; they merely get smaller and smaller. Several of those small plastic particles are engulfed by aquatic animals or fish and eventually will end up in our dinner plates. They have additionally been found in a tremendous majority of the world's water. By preventive sewers and providing breeding grounds for mosquitoes and pests, plastic waste particularly plastic luggage will increase the transmission of vector-borne diseases like protozoal infection. Per year about 8 million tonnes of plastic end up in the world's oceans. A great deal of it comes from the world's rivers that function direct conduits of trash from the world's cities to the marine surroundings. Marine junk like plastics, metals, glass, and



different solid waste materials that enter the ocean surroundings may be found nearly all over within the ocean 60 to 95% of its plastic. From where all of these marine debris coming? 80% is coming from land-based sources like trash and concrete run-off, 20% is coming from overboard discharges and discarded goods. Concerning this, we are able to say that marine junk is turning into a harmful and dangerous predator to those organisms who consider the ocean as their home

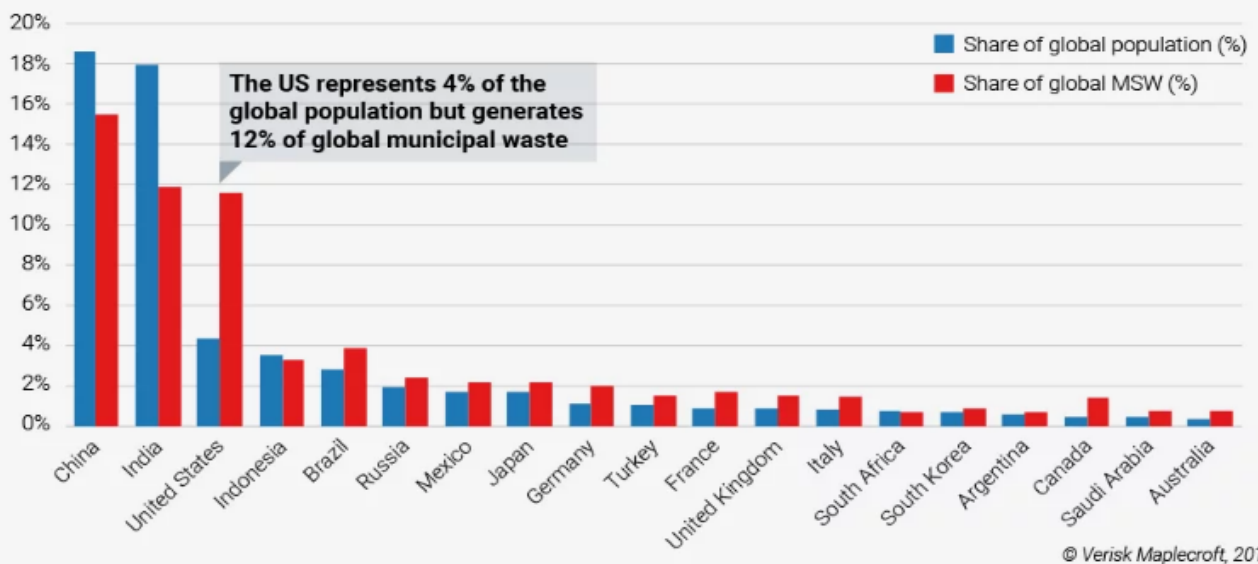
### Effects on Marine Life

Marine plastic pollution has effected over 267 species worldwide by adversely affecting their bodily function,

starvation, suffocation, infection, drowning, and entanglement. The proof of the plastic's impact on marine life is ever mounting. It is expected that there will shortly be more plastic in our oceans than fish. 50-80 % of all ocean turtles found dead have eaten some kind of plastic. Seabirds are accidentally feeding plastics to their chicks, misinterpreting as it for food, and one study found that 98% of the chicks sampled had eaten some kind of plastic in their diet. There are numerous whale species found dead after plastic consumption. In

levies, or perhaps prohibition bound merchandise outright. Africa stands out in all, because they have adopted a complete ban on the assembly and use of plastic bags. India has put off the ban on single-use plastic items in some part of the country. India has deferred the ban on single-use plastic things in some extent of the country. The Jal Shakti ministry has stepped into it to make sure the correct disposal of plastic waste. It is getting ready to line up a unit to assemble and recycle plastic waste. Each village is going

## Share of global population and Municipal Solid Waste (MSW) for G20 countries



2002 once a Minke whale was found with 800 kgs of plastic bags in its abdomen and in similar fashion in 2004 once a Cuvier's toothed whale was found with tightly packed black plastic bag blocking the entrance to its stomach.

to be asked to begin waste segregation. They will send plastic waste to block-level units that may convert the aggregate waste into bales, shred them and transport them to aggregators for use to create other useable items which builds the sustainable mechanism for absolute use of the resource.

### Government Initiative

If the current trend continues, our oceans may contain more plastic than fish by 2050. India being the second most plastic using country after China has to be more concern about its severe consequences on environment. There are a variety of things that governments will do from running public awareness campaigns to providing incentives for use, introducing

### A major breakthrough in degrading the plastics

A mushroom called *Pestatiopsis microspora* has been recently discovered by the scientist, which is capable of eating plastics. It contains a chemical that breaks down polyurethane materials from the plastic, and turns it

into the organic matter this could be potentially be used to clean up landfills.

## ***Conclusion***

It is time to find a better way to overcome this huge issue of plastic pollution. We can go with using natural biodegradable materials such as bamboo bottles, biodegradable plates, cups instead of plastic styrofoam made plates. Recently some entrepreneurs from Assam district made bottles made from bamboo and started selling to the market. Adopting such alternatives will reduce the load of plastic debris on our whole environment.

## ***References***

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