Preface

Plastic pollution is the accumulation of plastic objects and particles (e.g. plastic bottles, bags and microbeads) in the Earth's environment that adversely affects humans, wildlife and their habitat.[1][2] Plastics that act as pollutants are categorized by size into micro-, meso-, or macro debris.[3] Plastics are inexpensive and durable, making them very adaptable for different uses; as a result, manufacturers choose to use plastic over other materials.[4] However, the chemical structure of most plastics renders them resistant to many natural processes of degradation and as a result they are slow to degrade.[5] Together, these two factors allow large volumes of plastic to enter the environment as mismanaged waste which persists in the ecosystem and travels throughout food webs.[6][7]

Plastic pollution can afflict land, waterways and oceans. It is estimated that 1.1 to 8.8 million tonnes of plastic waste enters the ocean from coastal communities each year.[8] It is estimated that there is a stock of 86 million tons of plastic marine debris in the worldwide ocean as of the end of 2013, with an assumption that 1.4% of global plastics produced from 1950 to 2013 has entered the ocean and has accumulated there.

[9] Global plastic production has surged from 1.5 million tons in the 1950s to 335 million tons in 2016, resulting in environmental concerns. A significant issue arises from the inefficient treatment of 79% of plastic products, leading to their release into landfills or natural environments. [10]

Some researchers suggest that by 2050 there could be more plastic than fish in the oceans by weight.[11] Living organisms, particularly marine animals, can be harmed either by mechanical effects such as entanglement in plastic objects, problems related to ingestion of plastic waste, or through exposure to chemicals within plastics that interfere with their physiology. Degraded plastic waste can directly affect humans through direct consumption (i.e. in tap water), indirect consumption (by eating plants and animals), and disruption of various hormonal mechanisms.[12]
[i]

In the present book, ten typical literatures about Plastic Pollution published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Plastic Pollution. We hope this book can demonstrate advances in Plastic Pollution as well as give references to the researchers, students and other related people.

[i] https://en.wikipedia.org/wiki/Plastic_pollution