

Effect of Plastic and Micro-plastic on Climate Change

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Abstract

More than one million seabirds and over 100,000 sea animals are killed each year by plastics. Microplastics arise from a range of sources, including bigger, smaller and smaller plastic trash. Moreover, microbeads are extremely few components of produced plastic polyethylene, incorporated into health and beauty goods like certain cleaners and toothpaste as exfoliants. These tiny particles are easily transported through water filters and end up in the ocean and the Greater Lakes, posing a risk to water life. The difficulty with microplastics is that they don't dissolve into harmless molecules like plastics of any size. It can take hundreds of miles of years for plastics to break down — and the environment to be devastated meanwhile. Microplastics are evident on beaches as tiny colorful, sandy particles of plastic. Marine creatures regularly eat, resulting in microplastic contamination. In addition to their mechanical effects, free-floating pollutants, such as polychlorinated biphenyls, polycyclic aromatic hydrocarbons (PAH), and heavy metals tend to stick to their surfaces. Microplastics are in two categories: primary and secondary. Primary microplastic consists of small, commercially-designed particles such as cosmetics, as well as clothes and other textiles that are microfibers, such as fishing nets. Secondary microplastic is part of the degradation of more extensive plastic components, such as bottles of water. This decomposition is due to exposure to external elements, namely sunlight and ocean waves. Pollution from plastic is a risk to the safety



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and quality of food, healthy human beings, coastal tourism, and climate change. Study shows that when exposed to sun energy plastics produce greenhouse gases; studies reveal that microalgae are polluted by pollution from microplastics, which reduces the capacity of those plants to photosynthesize carbon in trapping them. The findings show that pollution from micro-plastics may interfere with the sequestration system for natural carbon in the ocean. Sunlight and heat contribute to potent greenhouse gases released by plastic which lead to an alarming feedback circuit. As climate changes, the globe is hotter, more methane and ethylene are produced from plastic, which increases the rate of change and perpetuates the cycle. The utilization of existing international, legally binding agreements to combat marine plastics pollution is urgently needed. To avoid and decrease plastic pollution, recycling and reuse of plastic items and funding for research and innovation are essential to developing new products to replace plastics.

Keywords: Climate change, Global Environment, Micro-plastic, Environmental pollution

Biography

Dr Nirban Laskar is Assistant Professor in the Department of Civil Engineering at Mizoram University, Aizawl, India. He has more than three years of teaching experience and he has expertise in Water Resource and Environment Engineering.